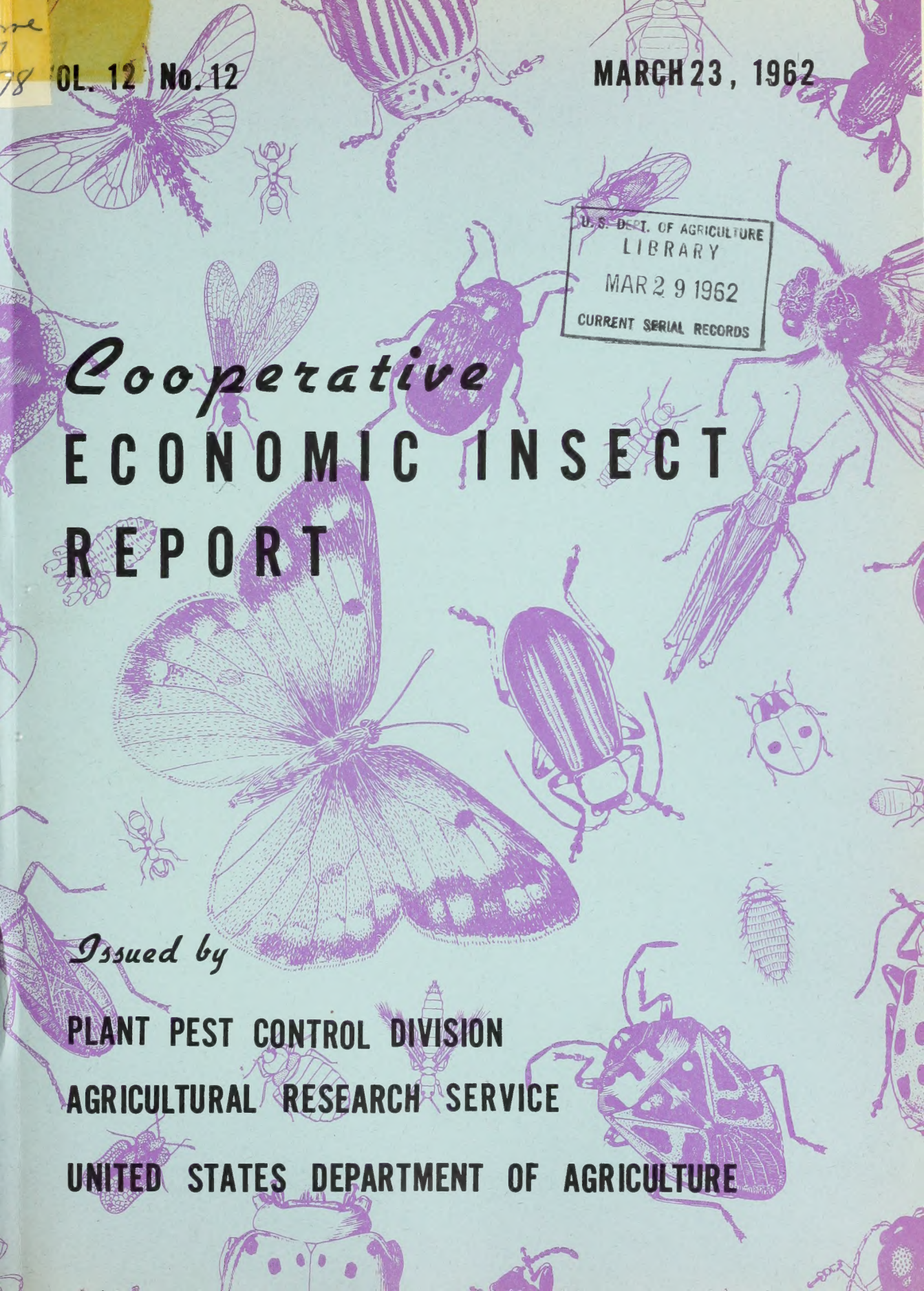


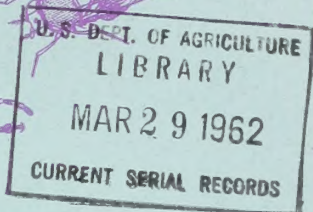
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MARCH 23, 1962



Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

Overwintering eggs of ALFALFA WEEVIL not hatched in Delaware, but larvae causing damage to alfalfa in Chambers, Talladega, Houston and Lee Counties, Alabama, and light infestations reported in several Georgia counties. Alfalfa weevil adults active and mating in Churchill, Douglas and southern Washoe Counties, Nevada, and adults emerged from litter collected in 3 Utah counties. CLOVER LEAF WEEVIL larvae active on alfalfa in Oklahoma and Delaware, and adults of CLOVER ROOT CURCULIO light in 2 Nevada counties. First PEA APHID nymphs of season noted in Delaware. ARMY CUTWORM infestations common on wheat in western Oklahoma. (p. 237). WINTER GRAIN MITE moderate to heavy in Ellis and Kaufman Counties, Texas; several farmers applied controls. Few winter grain mites also observed in wheat in south central and central Missouri. (p. 238). MITES heavy and damaged azalea and camellia plants in Lee and Russell Counties, Alabama. Treatments being applied for CHICKEN BODY LOUSE on replacement flocks in upper Arkansas River Valley of Arkansas. (p. 241). Infestations of CHICKEN MITE medium to heavy on chickens in same area of Arkansas and caused concern in past several weeks. EASTERN SUBTERRANEAN TERMITE swarms reported from Delaware, Pennsylvania and Missouri. KHAPRA BEETLE infestation discovered on farm in Parker area of Yuma County, Arizona. This is only known infestation in State. (p. 243).

Forecasts of Insect Conditions

BEET LEAFHOPPER movement from southern desert breeding areas of southern Utah and Nevada, southeastern California and central Arizona expected to be light to moderate to cultivated districts of central and southern Arizona, southeastern California, southern Utah and Nevada; light to central and northern Utah; and moderate to eastern Utah and western Colorado, with possible heavy concentrations due to local topography. (p. 239)

Insect Detection

A SPRUCE NEEDLE MINER (*Epinotia nanana*) recorded for first time in Delaware. (p. 240) and a SPIDER BEETLE (*Mezium affine*) noted in Wyoming for first time. (p. 260). MIMOSA WEBWORM larvae collected in Beaufort County, South Carolina; a new county record (p. 240), and HOLLY LEAF MINER collected in nursery in San Marcus, San Diego County, California (p. 241). This latter pest is subject to eradication treatment in California. A BEE MITE (*Acarapis dorsalis*) was recorded for first time in 1961 in Wyoming and Nebraska. This species is non-economic, however. (p. 274).

Corrections

ASIATIC GARDEN BEETLE (*Autoserica castanea*) notes in CEIR 12(2):23 and CEIR 12(11):203 in error. (p. 243).

(Continued on page 236)

Special Reports

Second Beet Leafhopper Survey - Desert Areas of Southern Utah and Nevada, Southeastern California and Central Arizona. (p. 239).

Summary of Insect Conditions - 1961 (continued)

INSECTS AFFECTING MAN AND ANIMALS - (p. 244).

HOUSEHOLD AND STRUCTURAL INSECTS - (p. 256).

STORED-PRODUCT INSECTS - (p. 263).

BENEFICIAL INSECTS - (p. 266).

MISCELLANEOUS INSECTS - (p. 270).

Reports in this issue are for week ending March 16, unless otherwise indicated.

WEATHER OF THE WEEK ENDING MARCH 19

This week's weather was cold, dry and windy over most of the Nation. Low temperatures and new snowfall maintained a heavy snow cover in the North Central Interior. Drought, with a high fire hazard, continued unabated in the southern portion of the Florida Peninsula as the week's rainfall there was again negligible. In the Great Plains, strong winds drifted snow in central and upper portions and whipped up some dust in western portions of Kansas and Oklahoma. This week was 3° to 9° colder than normal in the South and Far West, and 12° to 18° colder in the central and northwestern Great Plains. Many stations in northern areas west of the Great Lakes had subzero minima, with Foxpark, Wyoming, reporting -36° and Sibley, Iowa, -7°. Freezing extended over southern Arizona on Thursday and over most southern areas east of the Continental Divide, except Florida, during the weekend. In Texas, some crop damage was reported when a general frost occurred in the Winter Garden area on Friday and in the lower Rio Grande Valley, with a low of 29° at McAllen on Saturday. A light freeze occurred in most of Georgia on the 18th. This was the fourth consecutive week of abnormally cold weather in the North Central Interior and Far West. For the second consecutive week, temperatures have averaged from 3° to 9° above normal in the Great Lakes region and Northeast.

Precipitation was insignificant in the western Great Plains and Far West. Amounts exceeding 0.50 inch were mostly limited to the gulf and Atlantic coasts and some relatively small areas in the North Central Interior. Very beneficial rain in the northern half of the Florida Peninsula ranged from 0.50 inch to over 2 inches. Precipitation in most northern areas generally was in the form of snow, most of it falling the first of the period when an extensive storm system was centered over the Great Lakes. Following the storm, Newcastle, Nebraska, reported 32 inches of snow on the ground. In Iowa, particularly the northwestern third, heavy, drifting snow blocked highways and forced some schools to close. The storm dumped 4 to 14 inches of snow in New England, with heaviest amounts in New Hampshire and western Maine. The heavy snow cover in north central areas ranged up to more than a foot in the eastern Dakotas, southwestern and eastern Minnesota and western Wisconsin. The northwestern third of Iowa is covered with 12 to 18 inches of snow. In the Northeast, several inches of snow covers some mountainous areas of Pennsylvania and New York State, and extreme northern New Jersey. In New England, the ground is bare in much of the south and southeast, and only 1 inch of snow covers northeastern and southeastern Maine, with depths elsewhere under 10 inches, except up to 40 inches in northern portions of New Hampshire and Vermont. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

ALFALFA WEEVIL (Hypera postica) - DELAWARE - Overwintering eggs have not hatched in New Castle and Sussex Counties. Approximately 16 percent of old stalks examined in untreated field in New Castle County contained overwintering egg masses; overwintering adults mating in same field on March 15. (Burbutis)
GEORGIA - Light infestations on untreated alfalfa in Polk County; treated fields in county showed no feeding symptoms and sweeping for larvae negative. Very light feeding on one treated field in Gordon County. Alfalfa in soil banks in Clarke, Wilkes and Bartow Counties infested. (Johnson). ALABAMA - Moderate infestations damaged alfalfa fields in Chambers, Talladega, Houston and Lee Counties; averaged 10 larvae per sweep in untreated fields. (Buttram). UTAH - Adults emerged from litter collected about alfalfa fields and fencerows at Logan, Cache County; Salt Lake City, Salt Lake County; and Brigham City, Box Elder County, suggesting normal survival. (Knowlton). NEVADA - Adults active and mating in Churchill, Douglas and southern Washoe Counties. (Nev. Coop. Rpt.).

AN ALFALFA WEEVIL (Hypera brunneipennis) - ARIZONA - Heavy infestations continue to damage alfalfa in Yuma County; infestations increasing in some alfalfa fields in central area. (Ariz. Coop. Sur.).

CLOVER LEAF WEEVIL (Hypera punctata) - OKLAHOMA - Light larval populations observed on alfalfa in scattered areas of northwestern part of State. (Okla. Coop. Sur.). DELAWARE - Half-grown larvae present in alfalfa in New Castle County averaging approximately 1 larva per plant. Feeding injury to new growth very light. (Burbutis).

CLOVER ROOT CURCULIO (Sitona hispidula) - NEVADA - Light populations of adults in alfalfa crowns in southern Washoe County; occasional specimens in Douglas County alfalfa fields. (Arnett, Bechtel).

PEA APHID (Macrosiphum pisi) - NEW MEXICO - Populations remain very light in alfalfa fields statewide probably due to below normal temperatures and populations of lady beetles. (N. M. Coop. Rpt.). OKLAHOMA - Light populations observed on alfalfa throughout southern and western parts of State. (Okla. Coop. Sur.). ARKANSAS - Surveys in northwestern part of State negative. (Ark. Ins. Sur.). DELAWARE - First nymphs of season present on young alfalfa in eastern Sussex County. (Burbutis).

SPOTTED ALFALFA APHID (Therioaphis maculata) - TEXAS - Light, local infestations in Gaines County; no winged aphids found. (Tex. Coop. Rpt., Boren). OKLAHOMA - Light populations observed on alfalfa in southeast, south central, southwest and northwest areas of State. (Okla. Coop. Sur.). NEW MEXICO - Populations remain very low in alfalfa fields statewide probably due to populations of lady beetles. (N. M. Coop. Rpt.).

ARMY CUTWORM (Chorizagrotis auxiliaris) - OKLAHOMA - Infestations common on wheat throughout western half of State. Counts generally low but populations of up to 8 per square foot of soil surface observed in isolated spots in areas of Roger Mills and Dewey Counties. Counts of 7-10 per square foot observed on alfalfa in Logan and Garfield Counties. (Okla. Coop. Sur.).

LEAFHOPPERS - OKLAHOMA - Unidentified species continue to be active on alfalfa and wheat throughout State. (Okla. Coop. Sur.).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - OKLAHOMA - Light populations observed on alfalfa in southeastern area and on wheat in south central areas. (Okla. Coop. Sur.).

GREENBUG (Toxoptera graminum) - NEW MEXICO - Averaged 6 to 8 aphids per linear foot in grain fields of De Baca County. (N. M. Coop. Rpt.). TEXAS - Caused light damage to small grain in Kaufman County; no count given. Noneconomic in Wichita, Potter, Armstrong, Donley, Childress, Hardeman and Wilbarger

Counties. Remains potential threat with favorable weather. (Turney, Daniels). OKLAHOMA - Infestations continue at noneconomic level throughout State with exception of scattered light populations in southwest. Higher population found in Jackson (6-45 per linear foot) and Tillman (8-30 per linear foot) Counties. All other counts well below 10 per linear foot. (Okla. Coop. Sur.). ARKANSAS - Surveys in northwestern part of State negative. (Ark. Ins. Sur.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Generally light, scattered populations observed in southeastern area (2-20 per foot), in southwest (0-50 per foot), in west central (0-3 per foot) and in northwest (0.5 per foot). (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum granarium) - OKLAHOMA - Light populations observed in Love County (3 per foot), Garfield County (2-5 per foot) and Kingfisher County (5 per foot). (Okla. Coop. Sur.).

APHIDS - GEORGIA - Heavy infestations of unspecified species on oats and rye in Decatur and Grady Counties. (Galbreath).

THRIPS - GEORGIA - Heavy infestations of unspecified species on oats and rye in Decatur and Grady Counties. (Galbreath).

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Incidence of diseases in overwintering borers appears very high in Sussex County; no pupation has occurred in State. (Burbutis).

A CRANE FLY (Tipula simplex) - CALIFORNIA - Light populations occurred on rangeland at Madera, Madera County. (Cal. Coop. Rpt.).

BLACK VINE WEEVIL (Brachyrhinus sulcatus) - CALIFORNIA - Light larval infestation in grass roots in Crescent City, Del Norte County. (Cal. Coop. Rpt.).

WINTER GRAIN MITE (Penthaleus major) - TEXAS - Moderate to heavy widespread infestations in Ellis and Kaufman Counties; several farmers applied controls. (Turney). MISSOURI - Few mites observed in wheat in south central and central areas; counts averaged under 1 per foot of drill row. (Munson).

BROWN WHEAT MITE (Petrobia latens) - TEXAS - Found on wheat in Donley County but apparently causing less damage than the dry weather. (Daniels). OKLAHOMA - Light populations observed in Caddo, Harmon and Jackson Counties; up to 150 per linear foot. (Okla. Coop. Sur.).

FRUIT INSECTS

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - TEXAS - An armored scale tentatively identified as this species observed on peach trees in Parker County. (Turney).

A WEEVIL (Compsus auricephalus) - TEXAS - Single specimen taken from peach tree in Nueces County; no apparent damage. (Nolan).

CALIFORNIA PRIONUS (Prionus californicus) - UTAH - Larvae severely infested roots of cherry trees at Riverdale, Weber County; pulling required of a number of trees. (Knowlton).

COTTON APHID (Aphis gossypii) - FLORIDA - Lightly infested leaves of 8,000 orange trees at Land O'Lakes, Pasco County. (Sellers, March 1).

TRUCK CROP INSECTS

Second Beet Leafhopper Survey - Desert Areas of Southern Utah and Nevada, Southeastern California and Central Arizona.

The second beetleleafhopper (Circulifer tenellus) survey, made March 1-12, indicates further buildup of leafhopper populations in the southern desert breeding areas, particularly that portion lying south of the 34th degree parallel. Intermittent rainfall and cool temperatures since mid-January have favored germination and growth of additional weed-host plants in Arizona and to some extent elsewhere in the areas surveyed. Beet leafhopper movement from these desert areas is expected to be light to moderate to cultivated districts of central and southern Arizona, southeastern California, southern Utah and Nevada; light to central and northern Utah; and moderate to eastern Utah and western Colorado, with possible heavy concentrations due to local topography. It should be emphasized that this report concerns only the beet leafhopper populations present in the far southern desert breeding grounds and does not have reference to populations that may have overwintered in local breeding areas in northern and eastern Utah, in western Colorado and western Nevada. (PPC. West. Reg.; Mar. 19).

GREEN PEACH APHID (Myzus persicae) - OKLAHOMA - Light populations (4 per plant) occurring on spinach in Bixby area, Tulsa County. (Okla. Coop. Sur.). ARIZONA - Medium to heavy infestations present on safflower in central and southwestern parts of State. (Ariz. Coop. Sur.).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Four adults collected in Palm Garden area, 6 miles southeast of Brownsville, Cameron County. Weevils first appear in this area annually, but do not necessarily indicate a severe season. (Deer).

DARKLING BEETLES - TEXAS - Unspecified species caused light damage in Rio Grande Valley locally. (Deer).

COTTON APHID (Aphis gossypii) - TEXAS - Caused light damage locally in lower Rio Grande Valley. (Deer).

CUTWORMS - TEXAS - Unspecified species caused damage in lower Rio Grande Valley. (Deer).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES - ARKANSAS - Warm temperatures in February brought about slight increase in Ips sp. and Dendroctonus terebrans in southern area. Both species occurred about as expected. Local, small spots of one to a few trees infested, with one area with as much as one-fifth acre infested. This is enough potential population to cause considerable spread in summer under favorable conditions. Salvage underway and should stop spreads as adjoining trees with brood present are removed. (Ark. Forest Pest Rpt., March).

PALES WEEVIL (Hylobius pales) - ARKANSAS - Activity continued throughout winter except during periods of very cool weather. Heavy activity noted week ending February 16. (Ark. Forest Pest Rpt., March).

PINE WEEVILS - ARKANSAS - Activity by Pissodes sp. continued throughout winter except during periods of very cool weather; heavy activity noted week ending February 16. Very active in late fall during periods of warm weather and in recent weeks. Pachylobius picivorus rarely appeared since November; increased activity expected as daily temperature increases. (Ark. Forest Pest Rpt., March).

A CONIFER SAWFLY (Neodiprion taedae linearis) - ARKANSAS - Eggs survived weather conditions of mid-January; hatching expected soon in southern area. (Ark. Forest Pest. Rpt., March).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - ARKANSAS - Emergence of adults noted in southern area week of February 19. Activity began following period of warm weather. Conditions now changed and unseasonable cold weather of late February and early March will cause delay. Very cold weather in January apparently did not cause any great amount of mortality to overwintering forms. Activity will resume as weather becomes favorable. (Ark. Forest Pest Rpt., March).

A COSMOPTERYGID MOTH (Periploca n. sp.) - CALIFORNIA - Light infestation on Juniperus sp. in Redlands, San Bernardino County. Pest is widespread and continues to cause considerable damage. (Cal. Coop. Rpt.).

A SPRUCE NEEDLE MINER (Epinotia nanana) - DELAWARE - Adults and larvae collected from spruce in Newark, New Castle County, on May 8, 1959. This is a new state record. Det. by D. Davis. (Burbutis).

A PINE BARK APHID (Cinara sp.) - ARKANSAS - Present in light numbers into early January until very cold weather. Since then very limited activity noted. Few eggs observed in January; infestations expected to increase as weather warms. (Ark. Forest Pest Rpt., March).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - MARYLAND - Infested red pine at Cascade, Washington County. (U. Md., Ent. Dept.).

-AN ERIOPHYID MITE (Aceria mackiei) - CALIFORNIA - Occuring as medium infestation on California live oak in San Simeon, San Luis Obispo County. (Cal. Coop. Rpt.).

MIMOSA WEBWORM (Homadaula albizziae) - SOUTH CAROLINA - Larvae collected on pecan leaves in Beaufort County on April 18, 1959. This is a new county record. Det. by D. Davis. (Nettles et al.).

Aphids in Florida - Aphis gossypii in all stages lightly infested 100 seagrapes at Naples, Collier County, on March 7; Aphis nerii moderately infested 8 oleanders at Trilby, Pasco County, on March 9; Cerataphis variabilis in all stages severely infested 10 Alexandria kingpalms at Cape Coral, Lee County, February 26; Cinara tujafilina lightly infested 5 arborvitae at Clewiston, Hendry County, on March 9; Toxoptera aurantii lightly infested 50 seagrapes at Davie, Broward County, on February 28. (Fla. Coop. Sur.).

BARNACLE SCALE (Ceroplastes cirripediformis) - ARIZONA - Heavy infestations present on dwarf myrtle in Phoenix area, Maricopa County. (Ariz. Coop. Sur.).

BLACK SCALE (Saissetia oleae) - CALIFORNIA - Heavy populations occurring on Baccharis pilularis which is also infested with gall wasps in Carmel Highlands, Monterey County. (Cal. Coop. Rpt.).

EUONYMUS SCALE (Unaspis euonymi) - MARYLAND - Heavy infestation on euonymus at Baltimore. (U. Md., Ent. Dept.). OKLAHOMA - Occurred on euonymus plants in Mayes, Lincoln and Tillman Counties. (Okla. Coop. Sur.).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - MARYLAND - Heavy infestation on flowering cherry at University Park, Prince Georges County. (U. Md., Ent. Dept., Mar. 7).

Coccids in Florida - Asterolecanium pustulans lightly infested 300 Java bishopwood plants at Fort Lauderdale, Broward County, on February 27; Ceroplastes cirripediformis collected on stems of 20 Malpighia sp. at Naples, Collier County, on March 9; Ceroplastes floridensis lightly infested leaves of 300 Java bishopwood plants at Fort Lauderdale, Broward County, on February 27; Coccus hesperidum lightly infested leaves of 10 orchids at Bonita Springs, Lee County, on March 2, and lightly infested leaves of Pongamia sp. at Naples, Collier County, on March 7; Fiorinia theae moderately infested leaves of 20 Camellia sp. at Bradenton, Manatee County, on March 9, moderately infested leaves of 200 Camellia sp. at Grant, Brevard County, and moderately infested leaves of 28 Chinese holly at Miami, Dade

County, on March 1; Protopulvinaria pyriformis moderately infested leaves of Bauhinia variegata at Bradenton, Manatee County, on March 9, moderately infested leaves of Java bishopwood at Fort Lauderdale, Broward County, on February 27, and lightly infested leaves of Feijoa sp. at Sanford, Seminole County, on March 8; Pulvinaria psidii lightly infested leaves of 20 Chrysophyllum sp. at Naples, Collier County, on March 8; Saissetia oleae lightly infested leaves of white sapote at Estero, Lee County, on March 1; Chrysomphalus aonidum lightly infested leaves of 300 Java bishopwood plants at Fort Lauderdale, Broward County, on February 27, infested Cycas revoluta at Hialeah, Dade County, on March 1, and severely infested leaves of 28 Chinese holly at Miami, Dade County, on March 1; Chrysomphalus dictyospermi light on leaves of cypress at Fort Lauderdale, Broward County, on February 27; Lepidosaphes camelliae moderately infested leaves of 20 Camellia sp. at Grant, Brevard County, on March 8; Pinnaspis aspidistrae severely infested stem of Africanviolet at Fort Pierce, St. Lucie County, on February 26; Pinnaspis strachani infested leaves of 5 pigmy date palms at Fort Myers, Lee County, on February 28; Diaspis visci lightly infested leaves of 60 Italian cypress at Davie, Broward County, on February 28; Neopinnaspis harperi infested bark of willow at Hawthorne, Alachua County, on March 9; Parlatoria proteus moderately infested Cycas revoluta at Fort Myers, Lee County, on February 28; Phenacaspis cockerelli moderately infested Magnolia sp. and moderate to severe on Strelitzia sp. at Melbourne, Brevard County, on March 3; Icerya purchasi lightly infested leaves of 300 Java bishopwood at Fort Lauderdale, Broward County, on February 27; Pseudococcus nipae lightly infested leaves of 10 Chrysalidocarpus lutescens palms at Naples, Collier County, on March 7, and lightly infested leaves of 3 saw paurotis palms at West Palm Beach, Palm Beach County, on March 7. (Fla. Coop. Sur.).

HOLLY LEAF MINER (Phytomyza ilicis) - CALIFORNIA - Medium infestation damaging leaves of yaupon in nursery in San Marcus, San Diego County. This pest subject to eradication treatment; statewide survey underway with particular attention centered on nursery stock. (Cal. Coop. Rpt.).

SPRUCE SPIDER MITE (Oligonychus ununguis) - MARYLAND - Egg were very abundant on Norway spruce at College Park, Prince Georges County, on March 12. (U. Md., Ent. Dept.).

MITES - ALABAMA - Heavy infestations of undetermined species damaged azalea and camellia plants in Lee and Russell Counties. (Buttram).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (Hypoderma spp.) - UTAH - Grubs becoming more numerous in Box Elder and Cache Counties on cattle; 20 percent have cut holes through hides in Logan area. (Knowlton). OKLAHOMA - Limited activity of Hypoderma lineatum reported from several areas in the State. (Okla. Coop. Sur.).

MOSQUITOES - MARYLAND - First instar of Aedes spp. common in woodland pools in central and southern sections of Caroline County on March 13. (U. Md., Ent. Dept.).

HEAD LOUSE (Pediculus humanus capitis) - PENNSYLVANIA - Collected on eyelashes of 14-month-old baby in Butler County on March 10. (Adams).

HOG LOUSE (Haematopinus suis) - OKLAHOMA - Reported on hogs in Dewey County. (Okla. Coop. Sur.).

CATTLE LICE - OKLAHOMA - Several species continue to be reported throughout the State. (Okla. Coop. Sur.).

CHICKEN BODY LOUSE (Menacanthus stramineus) - ARKANSAS - Infestations in replacement flocks in upper Arkansas River Valley became economic; treatments now being applied. (Ark. Ins. Sur.).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Infestations observed on cattle and hogs in Pushmataha County. (Okla. Coop. Sur.).

CHICKEN MITE (Dermanyssus gallinae) - ARKANSAS - Infestations in replacement flocks in upper Arkansas River Valley caused concern past several weeks; infestations medium to heavy. (Ark. Ins. Sur.).

HOUSEHOLD AND STRUCTURAL INSECTS

BARK BEETLES - PENNSYLVANIA - Moderate numbers of Gnathotrichus materiarius occurred around window, floor and fireplace in a home in Philadelphia. Det. by W. Boyle. (H. Menusan, March 1). COLORADO - Undetermined species infested mahognay trim of a new house in Chaffee County. (Hantsbarger, Lawson).

ELM LEAF BEETLE (Galerucella xanthomelaena) - UTAH - Adults evidently overwintered in home in Salt Lake City, Salt Lake County. (Knowlton).

A GROUND BEETLE (Bembidion sp.) - PENNSYLVANIA - Numerous specimens annoying in home in Hershey, Dauphin County. (Balsbaugh).

A LATHRIDIID BEETLE (Microgramme argua) - OREGON - Infested insulation throughout a large apartment house and has defied chemical control measures to date. (Grove, Mar. 10).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - UTAH - Serious infestation occurred in home at Lewiston, Cache County. (Knowlton).

SOUTHERN LYCTUS BEETLE (Lyctus planicollis) - TEXAS - Caused light damage to door in a Nueces County high school. (Nolan).

ORIENTAL COCKROACH (Blatta orientalis) - COLORADO - Appeared in clothes closet in Adams County. (Lesser, Hantsbarger, Lawson).

BOXELDER BUG (Leptocoris trivittatus) - MARYLAND - Caused nuisance by entering home in Rockville, Montgomery County. (U. Md., Ent. Dept.). UTAH - Entered homes in North Ogden, Weber County. (Knowlton).

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - PENNSYLVANIA - Winged forms identified from homes in Philadelphia, Philadelphia County, on February 25, and from Harrisburg, Dauphin County, on March 6. Caused considerable destruction to tablets and other school supplies in storeroom of school in Waynesburg, Greene County, on March 16. (Udine). DELAWARE - First swarms of season noted on March 13. (Burbutis). MISSOURI - First swarms of season in south central area week ending March 17. (Munson).

BROWN DOG TICK (Rhipicephalus sanguineus) - MARYLAND - Infested five-story house in Annapolis, Anne Arundel County. (U. Md., Ent. Dept.).

CASEMAKING CLOTHES MOTH (Tinea pellionella) - DELAWARE - Larvae infested carpets in church in Sussex County. (Green).

CLOVER MITE (Bryobia praetiosa) - NEW MEXICO - Entered homes in Albuquerque area, Bernalillo County, and became a real nuisance. (N. M. Coop. Rpt.).

STORED-PRODUCT INSECTS

KHAPRA BEETLE (Trogoderma granarium) - ARIZONA - Small, new infestation discovered on farm in Parker area, Yuma County. This is only known infestation in State. (Ariz. Coop. Sur.).

Stored-products Insects in Oklahoma - RICE WEEVIL (Sitophilus oryzae), CONFUSED

FLOUR BEETLE (Tribolium confusum), SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis), CADELLE (Tenebroides mauritanicus), LESSER GRAIN BORER (Rhyzopertha dominica) and a PSOCID were found in farm storage facilities checked in Marshall and Love Counties. (Okla. Coop. Sur.).

BENEFICIAL INSECTS

LADY BEETLES - OKLAHOMA - Limited activity of several species observed in alfalfa and in small grain fields throughout State. (Okla. Coop. Sur.). TEXAS - Limited numbers present in north central area in small grains; cool weather reduced activity at time field was examined. (Turney). NEW MEXICO - Populations present in most alfalfa fields in State. (N. M. Coop. Rpt.).

DAMSEL BUGS (Nabis spp.) and a LACEWING (Chrysopa sp.) - OKLAHOMA - Observed in alfalfa and small grain fields throughout State. (Okla. Coop. Sur.).

A PARASITIC ICHNEUMON (Bathyplectes curculionis) - NEVADA - Numerous cocoons found in alfalfa fields in Douglas County and only trace numbers found in southern Washoe County. (Arnett, Bechtel).

MISCELLANEOUS INSECTS

Fruit flies in Florida - McPhail traps have yielded 3 species of fruit flies in the State as follows: Anastrepha interrupta collected in Dade County at Homestead on February 21 and at Miami on March 8, and at Hobe Sound, Martin County, on March 9; Myoleja limata collected in Highlands County on February 20; and Toxotrypana curvicauda collected in Dade County at Miami Springs and Miami Beach on March 8, and at Bradenton, Manatee County, on March 6. (Fla. Coop. Sur.).

SPRINGTAILS - WISCONSIN - Became a nuisance in southern part of State. (Wis. Ins. Sur.).

APHIDS - PENNSYLVANIA - Overwintering eggs of probably Rhopalosiphum sp. numerous on barberry stems. (J. R. Raub).

CORRECTIONS

CEIR 12(2):23 - FIRST STATE REPORT - Autoserica castanea (Asiatic garden beetle) should be deleted. This was a first county record.

CEIR 12(11):203 - ASIATIC GARDEN BEETLE (Autoserica castanea) - Note should read as follows: "was reported for first time in Jackson County, NORTH CAROLINA, during 1961, when specimens that had been collected while feeding on potato, bean and carrot on July 8, 1960, were determined by O. L. Cartwright as this scarab."

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. ips.	Feltia. subterr.	Prod. ornith.	Laphyg. frug.
SOUTH CAROLINA					
Charleston 3/5-11	3	3	8	1	
Clemson 3/1-15	3			7	
FLORIDA					
Gainesville 3/13	1	1	7		1

SUMMARY OF INSECT CONDITIONS - 1961
(Continued from page 232)

INSECTS AFFECTING MAN AND ANIMALS

Highlights: FACE FLY was first reported during 1961 from Colorado, Georgia, Kentucky, South Carolina, South Dakota and Wyoming. Troublesome populations were reported in a number of Eastern and Midwestern States, particularly in areas where face fly has been established for more than one season. However, the pest was not particularly bothersome to cattle in Missouri where populations were much lower than those of 1960. Parasitism was thought to be a factor. HOUSE FLY was again a serious pest in various areas of the country; several states reported increased populations. HORN FLY was, as usual, of considerable concern to livestock producers rather generally. A number of states reported increased populations and considered the fly a major livestock pest. STABLE FLY was pestiferous in several states. SCREW-WORM reappeared in Florida during the latter part of May for the first time since the State-Federal eradication program of 1958-59; however, several million sterile flies were released in the infested area (Holmes County) and the infestation was believed eradicated. An outbreak also appeared later in the year in northeast Alabama and in Floyd and Dade Counties, Georgia, but the pest was believed to have been contained before it reached the overwintering sites to the south. Infestations of screw-worm in Texas and eastern Oklahoma were believed to be most severe in several years. CATTLE GRUBS were of concern in several Western States, particularly Washington, Wyoming, Utah, Colorado, Arizona, New Mexico, Texas and Oklahoma. Of special interest was the appearance of these pests in Alaska where they normally do not persist. BLACK FLIES were reported annoying in areas of Idaho, Utah, Nebraska, North Dakota, Maine, New Hampshire, Rhode Island and Maryland. TABANIDS were not particularly troublesome in 1961, although several states did report annoying numbers. MOSQUITOES were generally not as abundant as in 1960, but they did cause considerable annoyance in a number of areas throughout the country.

Several CATTLE LICE caused extensive damage throughout Utah and were of concern in Washington, Wyoming, Colorado, Oklahoma, Nebraska and Texas. LONE STAR TICK was troublesome in Oklahoma, Arkansas and Texas, as was GULF COAST TICK in the latter State. TROPICAL HORSE TICK was reported in a number of Florida counties for the first time. WINTER TICK was of concern in Arkansas, parts of Oklahoma and in Texas; and BLACK-LEGGED TICK is becoming an important pest in Arkansas. AMERICAN DOG TICK was a problem in Maine, Rhode Island, New Jersey, Missouri, Minnesota and South Dakota; and BROWN DOG TICK was troublesome in California, Arizona, Nevada, Texas, Oklahoma and Connecticut. NORTHERN FOWL MITE required controls in California and North Carolina. ASSASSIN BUGS were a problem in areas of Arizona and California; people were bitten in a number of instances. PUSS CATERPILLAR was abundant and caused concern to inhabitants of many communities in areas of Oklahoma, Arkansas, Virginia and North Carolina. HAG MOTH and SADDLEBACK CATERPILLAR were very numerous in Pennsylvania, and FLANNEL MOTHS were numerous in North Carolina. HORNETS, YELLOW JACKETS and other WASPS were of considerable concern and a nuisance to inhabitants of several states from California to Rhode Island. BLACK WIDOW SPIDER was more abundant than usual in Pennsylvania, where some controls were required; and the spider was of concern in Colorado, Utah, Nevada, California and Idaho.

Adult FACE FLY (*Musca autumnalis*) was collected during early June from range cattle at McLeod, Ransom County, NORTH DAKOTA, for a new country record. In SOUTH DAKOTA, this pest was reported for the first time. Confirmed collections have been made in 13 counties throughout the State and it is believed that face fly is present in all counties. Populations, however, were not high. No reports

of really serious infestations were received in MINNESOTA, but indications are that more survey work is needed. Face fly was reported in several new locations in late summer and it is believed to be generally present in the southern half of the latter State. The pest was reported in many areas of WISCONSIN and was apparently more widespread than in 1960. This fly was a problem with many herdowners and reports came from as far north as Ashland and Bayfield Counties in that State.

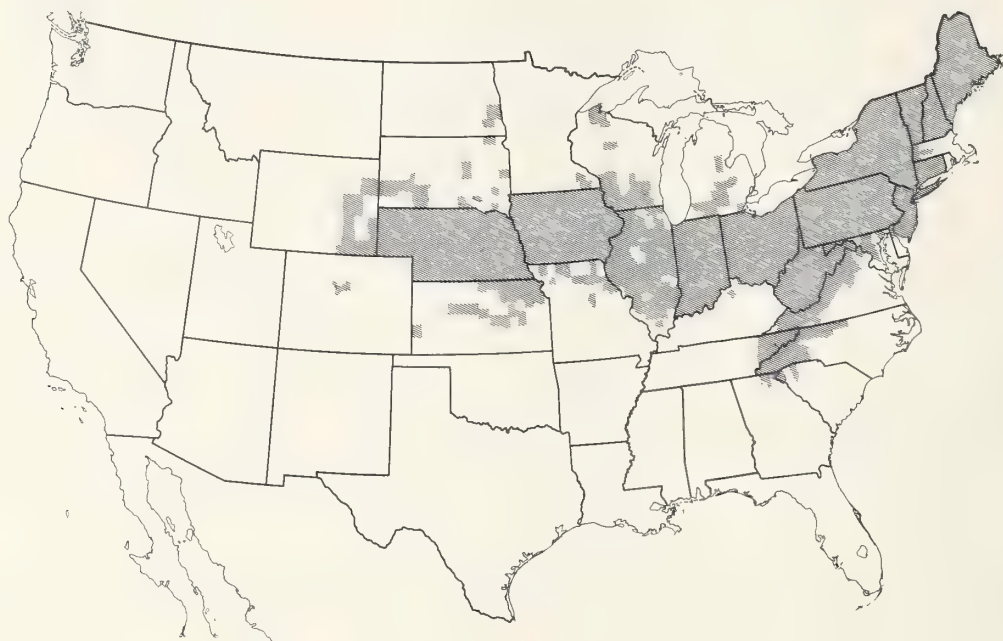
Face fly collections were made for the first time in WYOMING on July 26 in Albany County. Later, this pest was found in Goshen County (August 3, 25 and 26), Weston County (August 11), Converse County (August 18) and Laramie County (October 26). Face fly was reported for the first time in Clear Creek, Gilpin and Summit Counties, COLORADO, where males were collected in small numbers at elevations of 8,500-10,000 feet during late July and early August. This pest became numerous on faces of a small beef herd in Gilpin County. Face fly spread to all areas of NEBRASKA during the year and caused much irritation to cattle, especially in the eastern areas. It was known to infest only that area in 1960. Two overwintering sites were recorded early in 1961. Adults were found on cattle on June 1. During the remainder of the season, populations varied light to heavy from west to east across the State. Collections were made in most counties of the northern two-thirds of KANSAS, indicating a rapid spread from the single Marshall County record of 1960. During the fall, this pest became a nuisance around buildings. Surveys made across the northern half of ARKANSAS were negative.

Face fly populations in MISSOURI were much lower in 1961 compared with 1960. Highest counts in late July, 1960, ran 20-60 flies per animal compared with 5-23 per animal during the same period in 1961. Highest counts of the year were made in central and northern areas. In hibernation quarters where flies were numerous in 1960, very few could be found in 1961 season. One reason for the low populations of face fly in Missouri during the year could be parasitism. The entire State of IOWA is now assumed to be infested with face fly after the survey in mid-July added 21 counties to those known to be infested. In ILLINOIS, face fly, mixed with cluster fly (*Pollenia rudis*), was very annoying in homes in late March and early April. The first flies believed to be face fly were observed on cattle on April 21 when populations in the northern half of Illinois varied 0-10 per face, with an average of 0.8. By May 10, as many as 50 face fly adults had been observed on a few animals. This was a much earlier buildup than had occurred in previous years. The fly was annoying to cattle from this date until September 15 or later. In August, some cattle were observed grazing in compact bunches for protection against this pest. Face fly continued its slow movement southward in Illinois, and it was found for the first time in Wabash, Edwards, Wayne, Jefferson, Washington, Perry, Franklin and Hamilton Counties. However, examination of 47 herds, using both the hand method and blood bait for attracting flies, was made July 16-20 and August 21-24 in Monroe, Randolph, Jackson, Pope, Gallatin and White Counties, with negative results.

Face fly continued as the most important pest of livestock in INDIANA. Populations built up to high levels in late June and remained numerous until fall. Counts were similar to those of 1960, up to 60 per face and 200 per animal. During 1961, this pest spread to the southern third of the State where noneconomic numbers occurred; highest counts were 2-3 per animal. Incidence of pink-eye remained high in the area of heavy populations, and apparent correlation between this disease and presence of face fly were observed. In OHIO, this species was a serious pest of cattle and horses. In the second week of May a population peak occurred, after which populations on cattle were low until late June. Apparently this early peak consisted of a similar magnitude the past 3 years, with perhaps slightly lower numbers found in 1961 than in previous years. No economic loss value can be assigned this pest at the present time.

Face fly was first known to be present in GEORGIA in White County in late July; later the pest was found in several other counties. SOUTH CAROLINA first reported face fly in Oconee County on July 5 and in Greenville County on July 26. Face fly has spread southward in NORTH CAROLINA from the northwestern counties to all mountain counties and as far east as Winston-Salem, Forsyth County, and Shelby, Cleveland County. While it troubled livestock and was a pest in isolated areas, its abundance is being watched by all concerned. Face fly is now known to occur in 33 counties of VIRGINIA, having been found for the first time in Scott and Culpeper Counties during the 1961 season. This pest caused considerable irritation to livestock in the areas in which it occurs. Face fly, along with cluster fly and other flies, was reported as being a nuisance in numerous localities as they entered homes to hibernate. In MARYLAND, populations of this pest caused much annoyance to dairy and beef animals in the central counties. During the summer, counts on dairy herds frequently averaged over 50 per head. Control in general was difficult. Face fly was somewhat delayed in NEW JERSEY by a cool, wet spring, but it became a general annoyance in the late summer to dairy cattle. The pest was present in normal numbers in PENNSYLVANIA, but more abundant than in 1960 in CONNECTICUT, especially in New London County. Populations in VERMONT reached 15 to 25 per animal in late May, but killing frost eliminated further problem until mid-July. In NEW HAMPSHIRE, face fly was generally prevalent and troublesome throughout the State. This pest was observed on cattle in MAINE in early June in the Orono area, Penobscot County.

Distribution of Face Fly



HOUSE FLY (*Musca domestica*) was more abundant than normal in the Wenatchee area of central WASHINGTON, and numerous throughout UTAH, especially during late summer and fall with populations at least normal. The fly was heavy statewide in ARIZONA during the summer and fall, particularly around poultry houses and dairies. Populations were annoying in OKLAHOMA in homes and buildings in the north central area by mid-March. Populations of this pest remained below normal throughout mid-June but reached a peak of activity in late June. During July and August populations showed a downward trend which continued until early September, then populations increased. By late September and early October,

house fly became numerous in sheltered areas as cooler weather prevailed. In KANSAS, house fly populations were present in normal numbers; whereas in NEBRASKA, this pest ranged average to heavy throughout the season, with a late buildup in the sandhills area during October. High populations in MISSOURI caused considerable trouble from mid-August to mid-September around houses, barns, fairgrounds and picnic areas. House fly was not so numerous in WISCONSIN. The fly remained in second position of importance in INDIANA during 1961 as a pest of livestock. Populations throughout the State were apparently higher than in 1960.

House fly populations were high in droppings in California-type poultry houses in NORTH CAROLINA in Durham and Union Counties. Populations of this pest in MARYLAND were again high in and around barns, homes and restaurants throughout the summer and fall. House fly adults were a nuisance in NEW JERSEY in dairy barns as well as in homes and business establishments.

HORN FLY (Haematobia irritans) was one of the major pests of cattle in WASHINGTON and appeared in about normal numbers. In NEVADA, the pest was above normal in numbers throughout the State and populations increased rapidly from midsummer through the fall. Horn fly caused considerable losses in UTAH. Populations in NEW MEXICO were somewhat higher than usual in 1961; and this pest caused concern in TEXAS on livestock. The first horn fly activity in OKLAHOMA was noted in the southeast and east central areas in early April, and it became active throughout the State by mid-April. Populations remained below normal until mid-May when populations increased to 750 per animal (average 400) in the north central area. The second peak of activity was observed during July when populations per animal were 500-800 in the southwest, 750-1,000 in the south central and 300-500 in the north central area. Populations declined and another high period was observed in the south central and southwest areas in late October. Infestations of horn fly in ARKANSAS were heavier in 1961 than in 1960.

Horn fly was abundant in NORTH DAKOTA and SOUTH DAKOTA, and populations of this fly averaged 500 per animal and caused irritation to cattle in NEBRASKA. The highest count in the latter State was estimated at 3,000 on a bull in Greeley County in September. In KANSAS, horn fly appeared in early spring and continued to be present in usual numbers until late fall. This fly was the main insect pest of cattle in MISSOURI in the northern and central areas during 1961. Counts during the peak of the infestation in that State ranged from 50 to 800 per animal, with the highest counts occurring in the north central and northeastern areas. Relatively low populations were reported in southern areas of Missouri. In WISCONSIN, horn fly was not so numerous in 1961 compared with 1960. Populations in ILLINOIS varied 0-150 (average 5) per animal in the northern half of the State and 0-150 per animal (average 60) in the southern part of the State by May 15. By August 15, populations as high as 1,000 or more per animal were observed (averaged about 160) in the central portion of the State. Horn fly infestations in INDIANA were severe on untreated cattle throughout the summer in the northern area. In the southern half of the State, 2 population peaks occurred, one in June and the other the first part of September. Populations were present in normal numbers in PENNSYLVANIA and were again serious on dairy cattle in MARYLAND, particularly in the central area. The pest was occasionally reported in VIRGINIA during the 1961 season, but infestations were moderate to severe in GEORGIA and abundant in NORTH CAROLINA.

STABLE FLY (Stomoxys calcitrans) was present in normal numbers in PENNSYLVANIA during 1961, but was extremely abundant and annoying to man and animals in the tidewater areas of St. Marys County, MARYLAND, during August and September. There were only occasional reports of the pest in VIRGINIA, but it presented the usual problem to livestock production in ALABAMA and populations were heavier than in 1960 in ARKANSAS. Generally, fewer than one stable fly per animal was present in OKLAHOMA until early June at which time populations increased to an average of 20 per animal (maximum 50) in Payne County. Populations dropped from that peak until mid- and late August when 10-15 per animal

were observed in Pushmataha and Payne Counties. Another peak of activity in Oklahoma was noted in late October when counts averaged 18 per animal. By late November, counts averaged under one per animal. Infestations in KANSAS were numerous until frost and average populations occurred in NEBRASKA. Moderate to heavy populations were reported in many areas of NORTH DAKOTA and caused common and at least average annoyance to livestock in UTAH. Stable fly was not so numerous in WISCONSIN and populations in ILLINOIS were rather low in June and early July. However, numbers built up rapidly in July in the latter State, with as many as 15-20 per animal being observed on July 15. In August and September, herd averages of 15-30 per animal were common in Illinois, with as many as 75 recorded on an individual animal. The fly was again serious in INDIANA in barns with fouled bedding which was not changed frequently.

SCREW-WORM (*Cochliomyia hominivorax*) reappeared in FLORIDA during the latter part of May for the first time since the State-Federal eradication program of 1958-59. A natural infestation was found in cattle near Bonifay, Holmes County. Surveys were intensified and control measures were immediately effected. Several million sterile flies were released each week during the early part of the summer. The infestation now appears to be eradicated. In GEORGIA, infestations were found on cattle in early October in Floyd and Dade Counties. This was the first infestation since the eradication program began. An outbreak of screw-worm appeared in the northeast corner of ALABAMA and presented quite a problem. This outbreak in late summer spread over 21 counties in the State, including 6 central counties. Every precaution was taken to contain the pest and to prevent it from reaching overwintering sites in southern Alabama, Georgia and Florida. State, county and Federal personnel cooperated on the problem. In MINNESOTA, screw-worm infestations were reported in 4 locations in the State in late August. Three of these were in the St. Paul-Newport area not very far from the South St. Paul Union Stockyards. The fourth infestation was reported in the south central part of the State.

Infestations of screw-worm and SECONDARY SCREW-WORM (*Cochliomyia macellaria*) in KANSAS were normal. In OKLAHOMA, one of the heaviest screw-worm infestations in years occurred in the eastern half of the State. Activity started in early June and localized, heavy infestations were observed on cattle as late as early November. Infestations of screw-worm in TEXAS were believed to be the most severe in several years, but the pest was about normal in ARIZONA.

BLOW FLIES caused common and at least average annoyance to livestock in UTAH. They were more numerous than normal about many communities, farms and canyon recreational areas of the State.

BITING MIDGES (*Culicoides* spp.) annoyed humans in southeastern Washington County, MARYLAND, and in the West Bay area of Sagadahoc County, MAINE. *C. variipennis* was collected in TEXAS at Taylor, Williamson County, where it annoyed humans. Biting midges were prevalent for 2- to 5-week periods in parts of UTAH. Localities of Tooele, Salt Lake, Box Elder, Millard, Garfield and Juab Counties were troubled.

An EYE GNAT (*Hippelates pusio*) was reported occasionally in VIRGINIA during 1961. Heavy populations of *H. collusor* were present locally in Yuma County, ARIZONA, from May through November; and populations of this species were lower in the spring in southeastern Clark County, NEVADA, but equal to the high populations of previous years during the fall. *Hippelates* spp. populations and locations of occurrence were much reduced in CALIFORNIA generally, but heavy populations invaded the San Juan Capistrano area of Orange County.

VINEGAR FLIES were numerous in and about the ears of cattle in ILLINOIS and caused annoyance in the southern third of the State in mid-May.

Both larvae and adults of HORSE BOT FLY (Gasterophilus intestinalis) were very annoying to horses in many localities of UTAH.

Unspecified species of CATTLE GRUBS (Hypoderma spp.) appeared in a number of cattle in ALASKA during the spring in the Matanuska Valley. This was the first appearance of this pest in several years. Its appearance is undoubtedly due to the buildup of local dairy herds by importation of stock from other states two years ago. Normally this pest does not persist beyond the first winter. Both COMMON CATTLE GRUB (Hypoderma lineatum) and NORTHERN CATTLE GRUB (H. bovis) are among the major pests of cattle in WASHINGTON. Both species appeared in about normal numbers. In CALIFORNIA, common cattle grub was present over the State with a few medium infestations reported. Surveys in NORTH DAKOTA during February and March at western livestock saleyards showed 45.5 percent of the cattle examined were infested, with an average of 13 Hypoderma spp. per animal. Both common cattle grub and northern cattle grub were major pests of cattle in WYOMING during 1961. Research on more effective controls and methods of applications are continuing on herds in the State. Hypoderma spp. were also of concern in COLORADO; northern cattle grub was found in the northwestern part of the State during 1961. Severe damage by grubs of both species was usual in UTAH. Adults were also troublesome. New systemics were applied for grub control to several herds. Infestations of Hypoderma spp. were lower in NEVADA than in previous years, and heavy infestations of common cattle grub were reported in all areas of ARIZONA on untreated cattle. Adults of Hypoderma spp. were more numerous in Grant County, NEW MEXICO, during the spring months than they had been for several years. Infested animals had slightly above normal number of grubs appearing in their backs during the fall and winter months. Common cattle grub was of concern to livestock in TEXAS and it was present in moderate to heavy numbers in OKLAHOMA. Grubs averaged 12-25 per animal in most areas of the latter State from January to March. By mid-March adult activity had begun in the south central and southwest areas and continued into May. Common cattle grub was near normal over the State of KANSAS during 1961. Common cattle grub presented its usual problem to ALABAMA livestock production and infestations in GEORGIA were light to moderate. In INDIANA, both northern cattle grub and common cattle grub continued to be serious on western calves shipped into the State, but these pests were only moderately important on native-grown livestock. Hypoderma spp. increased slightly in numbers on dairy and beef cattle in MARYLAND over 1960.

A REINDEER WARBLE (Oedemagena tarandi) continued to be severe in reindeer and caribou herds in ALASKA. Infestations are lower in older animals.

A SNIPE FLY (Symphoromyia hirta) annoyed man and cattle in many canyons of UTAH. It was especially troublesome in northern and central areas of the State. Also in Utah, a FLESH FLY (Wohlfahrtia opaca) caused limited economic loss to mink in 1961. During 1959, mink growers suffered heavy losses due to this species. Sometimes this pest attacked other livestock.

BLACK FLIES (Simulium spp.) were common and in apparently normal numbers throughout much of IDAHO. A particularly severe infestation was noted in an area east of Rupert, Minidoka County, where adults caused considerable annoyance to livestock. Unspecified black flies were troublesome in parts of UTAH, particularly parts of Box Elder, Cache, Salt Lake, Utah and Uintah Counties and other farm areas. They were troublesome in several higher mountain localities during the fall hunting and fishing seasons. An undetermined species of black fly was a nuisance in Central City area, Merrick County, NEBRASKA, during May. In NORTH DAKOTA, troublesome populations of S. venustum were reported in several lawn areas at Fargo, Cass County. Simulium spp. were observed in MAINE on May 3, where they were flying in Kennebunk area, York County. No feeding attempts were noted then; feeding was noted on May 10 in York County; May 13 in Andros-coggin and Kennebec Counties; May 18 in Penobscot County; and May 22 in Hancock and Washington Counties. Unspecified black flies were about as troublesome as

usual throughout NEW HAMPSHIRE; and Prosimulium spp. were unusually abundant in RHODE ISLAND and caused much annoyance locally in Kent, Providence and Washington Counties during May and June. Simulium spp. caused considerable annoyance in MARYLAND to humans in 4 counties in the central part of the State.

TABANIDS caused common and at least average annoyance to livestock in UTAH and were of concern in TEXAS. Several species were common in OKLAHOMA in wooded areas of the east central, southeast and south central sections of the State by early May. Medium to heavy populations were common in the eastern third of the State and counts averaged 8-14 per animal in Noble County in mid-July. Counts in the summer were somewhat lower, but continued to annoy animals. Activity continued until late October in the southeast (3 per animal). The principal species involved were Tabanus abactor, T. sulcifrons, STRIPED HORSE FLY (T. lineola) and Chrysops spp. Populations of Tabanus spp. remained at low levels in KANSAS and undetermined deer flies caused annoyance in the sandhills area of Lincoln County, NEBRASKA, in June. Very low populations of Tabanus spp. were noted throughout the season in MISSOURI and various tabanids were relatively light throughout the 1961 season in ILLINOIS. The greatest numbers, 0-5 per animal, were observed in the southern part of the latter State about July 15-20. BLACK HORSE FLY (Tabanus atratus) and T. sulcifrons were much less apparent during 1961 in INDIANA, even in the normally heavily infested north-eastern area. Hybomitra difficilis was collected for the first time in FLORIDA at Torreya State Park, Liberty County, on April 12, 1960, by H. V. Weems, Jr. This is a southern extension of a boreal species which generally occurs in hilly to mountainous regions. Tabanus spp. presented the usual problems in ALABAMA to livestock production during the 1961 season and occasionally Tabanus spp. and Chrysops spp. were reported in VIRGINIA. Tabanus spp. were somewhat more numerous and troublesome in NEW HAMPSHIRE than usual.

MOSQUITO populations in ALASKA during 1961 were moderate compared with other years. They were quite bothersome in IDAHO during the spring and in early June, particularly in the wetter areas of the northern part of the State. Populations in 1961 generally appeared to be somewhat higher than those reported in 1960. In MONTANA, mosquitoes were generally less abundant in nonirrigated areas and more abundant in irrigated areas. A wet spring in many areas of WYOMING was favorable for heavy buildups of mosquito populations which caused great annoyance to man and animals in those areas. Populations of Culex tarsalis and other species varied in CALIFORNIA during the year due to the weather and rains. Mosquito incidence was probably lower this year in the State than it has been for several years. Abatement control and weather held local irritations to short periods.

Populations of mosquitoes in ARIZONA were medium to heavy in some areas throughout the summer and fall, being particularly heavy locally in northern areas. Populations in NEVADA were much below normal and at, or slightly below, the 1959-60 levels which were also drought years. In some irrigated areas, populations were normal and, in several areas, summer cloudbursts and the resulting runoff created high populations for short periods. Mosquitoes were troublesome in many areas in UTAH in the spring and in several areas throughout the season, but they were below normal in organized mosquito abatement districts of the State. A very dry summer reduced late June and July annoyance in many localities. Various species of mosquitoes were of concern to man and animals in COLORADO during 1961, being especially numerous in irrigated areas where drainage is a problem. An unusually wet summer in TEXAS and heavy rains following Hurricane Carla brought abundant mosquito populations in many areas.

High mosquito populations occurred during the late spring in MISSOURI, and mosquito populations in KANSAS appeared earlier than usual (primarily Aedes vexans and Culex tarsalis). Populations later in the season were near normal. The principal mosquito species causing nuisance in NEBRASKA were Aedes vexans, A. trivittatus, A. nigromaculis and Culiseta inornata. Most activity occurred during May and June in the latter State. Culex spp. and Anopheles spp. became

serious pests about the second week of May in SOUTH DAKOTA, and populations remained numerous throughout most of the summer in the eastern area of the State. Rainy periods in mid-August again increased populations in Brookings area, Brookings County. In NORTH DAKOTA, mosquitoes were generally light during the 1961 season.

Eleven species of mosquito larvae had been collected in MINNESOTA by May 4. Larvae of Aedes vexans were present in large numbers during the week of May 22 and, by June 10, this was the predominant adult species in that State. Adults of Mansonia perturbans were active at the same time. Light trap collections declined in early July. Several periods of heavy rainfall during late July and August resulted in temporary increases, with A. vexans generally the dominant species. The peak of Culex tarsalis occurred during the week of August 14. Because of the low day and night temperatures, mosquito populations had declined substantially by September 3. Principal mosquito species caught in Dane County, WISCONSIN, in blacklight traps during the season were NORTHERN HOUSE MOSQUITO (Culex pipiens pipiens), C. salinarius and C. restuans. A. vexans was more numerous toward latter part of the season. Mosquitoes were still being trapped in late October, which is later than in past years. Populations were generally low in the southern part of the State due to dry conditions, although some increase occurred later in the season. Mosquitoes were reported numerous throughout the summer in the northern part of the State.

Generally, mosquitoes were less troublesome in INDIANA throughout the early part of the year due primarily to weather conditions. Infestations during October, however, were unusually annoying. The principal species of mosquitoes causing a nuisance in OHIO were FLOODWATER MOSQUITO (Aedes sticticus), A. trivittatus and A. vexans; populations of floodwater mosquito were lower than normal in northern areas. Numerous reports of northern house mosquito were made in July and August from the larger cities in the northern part of the State. In PENNSYLVANIA, mosquitoes became somewhat of a problem late in the season.

SALT-MARSH MOSQUITO (Aedes sollicitans) was reported abundant in NORTH CAROLINA along with various other species, but the species was not abundant on the Eastern Shore of MARYLAND or in the southern parts of the State until late in the season when large broods emerged as a result of high tides flooding the marshes. Northern house mosquito and Culex salinarius were the most abundant and troublesome species during the summer in Maryland. In southern areas of that State, A. vexans and Psorophora confinnis were again annoying occasionally. A severe outbreak of A. trivittatus occurred in the environs of Laurel, Prince Georges and Howard Counties, in early September. As in previous years in DELAWARE, the most abundant species trapped were salt-marsh mosquito, Aedes vexans and Culex salinarius. Total numbers of females collected in 12 light traps were as follows: A. vexans, 2,569; A. sollicitans, 1,793; and C. salinarius, 4,613. These totals are considerably below numbers trapped during 1960. Not since 1952 has the level of pest species been so low. The abnormally low level of salt-marsh mosquito may be attributed to the impoundment at Little Creek, Kent County, and the extensive ditching systems present on the marshes. However, lack of high tides or rain to flood marshes and effectiveness of certain controls were also major factors in the reduced numbers of salt-marsh mosquito. Fairly heavy rainfall at the end of August caused emergence of many A. vexans in New Castle County, Delaware, but previous to this time the species was present only in small numbers. C. salinarius occurred throughout the State because of many suitable breeding habitats present. Conditions throughout NEW JERSEY during 1961 were among the most favorable on record from the standpoint of freedom from annoyance of mosquitoes. Most of the local problems noted were the result of manmade situations involving pollution or impounding of water. Broods of salt-marsh mosquito reached a peak in mid-September when temperature conditions were not favorable for wide dispersal. Rainfall patterns in fresh-water swamp areas were unfavorable for A. vexans following a small, spring brood. Northern house mosquito continued as a problem in New Jersey where pollution is associated

with rapid economic development and industrial waste water. Disease-vector species and those of special habits were not abundant. The mosquito season in RHODE ISLAND was severe with various species being present. The worst periods were late May, early July and early September. High populations in VERMONT were of the floodwater type. Mosquitoes were about as troublesome as usual throughout NEW HAMPSHIRE during the 1961 season.

SHEEP KED (*Melophagus ovinus*) infestations in NEW MEXICO were the lightest seen in several years. Flocks observed during shearing were found to have light to moderately heavy infestations in Guadalupe and Lincoln Counties. In COLORADO, this pest was of some concern. Sheep ked in UTAH was abundant and injurious generally, especially during the winter and on untreated lambs during the spring. Unspecified MAGGOTS also infested head and wool of many sheep about the State. SHEEP BOT FLY (*Oestrus ovis*) was abundant and annoying in Beaverhead County, MONTANA.

HOG LOUSE (*Haematopinus suis*) averaged 10-40 per hog on 3 farms in Howard County, MARYLAND, in late August; medium to heavy populations were common in OKLAHOMA on untreated hogs in many areas; and the pest was common in UTAH.

Light populations of undetermined CATTLE LICE appeared on cattle late in the year in Siskiyou County, CALIFORNIA; and populations in NEVADA were slightly above the pre-1960 level. In UTAH, cattle lice caused extensive damage throughout the State with many herds being severely infested. Controls were applied to 2,500 cattle in Kane County during the fall. Lice were also of some concern on livestock in COLORADO. Populations of lice in NEBRASKA ranged moderate to heavy early in the year. Controls were applied to large numbers of cattle. Few reports of louse activity were received in KANSAS. Medium to heavy infestations of several species of lice were noted on cattle in OKLAHOMA from January to late April, then declined in most areas. Infestations were heavier than those of the past several years. However, fall populations in Oklahoma were not as high as anticipated. Cattle lice were of concern on livestock in TEXAS and abundant in NORTH CAROLINA, but were not a problem in CONNECTICUT.

SHORT-NOSED CATTLE LOUSE (*Haematopinus eurysternus*) remained a serious problem in WYOMING although many herds throughout the State were effectively treated. The louse appeared in about normal numbers in WASHINGTON, where it was one of the major pests of cattle. A WRINKLED SUCKING LOUSE (*Haematopinus* sp.) was common on calves in ALASKA during the winter in the Matanuska Valley, and was especially troublesome where housing was poor. Although many herds throughout WYOMING were effectively treated during 1961, Solenopotes capillatus remained a serious problem. LONG-NOSED CATTLE LOUSE (*Linognathus vituli*) was one of the major pests of cattle in WASHINGTON, where it appeared in about normal numbers. CATTLE BITING LOUSE (*Bovicola bovis*) was common on calves during the winter in the Matanuska Valley of ALASKA, and was one of the major pests of cattle in WASHINGTON although populations were about normal in that State. Examination of cattle in NORTH DAKOTA in western livestock saleyards showed 11 percent of the animals infested with this species.

Infestations of EAR TICK (*Otobius megnini*) were present on 2 herds of native cattle in Shannon County, SOUTH DAKOTA, and the tick caused local damage to cattle, sheep and sometimes pets in numerous UTAH counties. Specimens collected in Yell County, ARKANSAS, were determined as this pest. Ear tick caused some concern in OKLAHOMA in areas of the northwest, west central and panhandle on cattle during May and June. An infestation of ear tick was noted in mid-October in Pontotoc County. An unspecified ear tick caused concern in TEXAS on livestock.

LONE STAR TICK (*Amblyomma americanum*) was present in the eastern part of OKLAHOMA, where it was reported to be a problem to man as well as animals in many sections. In late May, up to 200 per animal were observed on cows in McCurtain County,

which was heavier than normal for that time of year. Larvae of lone star tick were common during July and August and existed in heavy numbers (300-650 per animal) in the southeast and south central areas of Oklahoma. Lone star tick was very common and widespread in ARKANSAS, and both lone star tick and GULF COAST TICK (Amblyomma maculatum) were troublesome to livestock in TEXAS.

TROPICAL HORSE TICK (Dermacentor nitens) was collected 147 times in FLORIDA between July 1960 and March 10, 1961. Collections were primarily in Broward, Dade and Palm Beach Counties, but this pest was also found in Brevard, De Soto, Glades, Hendry, Hillsborough, Indian River, Lake, Marion, Monroe, Okeechobee, Orange and Volusia Counties. These are believed to be the first records for Florida. This hard-backed tick is particularly prevalent on horses in the American Tropics and it has been previously recorded in the United States only in the southernmost part of TEXAS.

PACIFIC COAST TICK (Dermacentor occidentalis) was reported from humans in CALIFORNIA, primarily during the summer vacations and hunting seasons. The earliest activity record for ROCKY MOUNTAIN WOOD TICK (Dermacentor andersoni) in Whitman County, WASHINGTON, was February 20. In IDAHO, this tick appeared in about average numbers. Rocky Mountain wood tick was particularly numerous in UTAH during the spring on cattle and horses, and it attacked persons on rangelands as well.

WINTER TICK (Dermacentor albipictus) was of concern on livestock in ARKANSAS. Populations of the tick began to appear in Payne County, OKLAHOMA, by mid-October. During October and November, light to heavy populations were observed in the south central and southeast areas of Oklahoma on horses and cows; and the tick was troublesome to livestock in TEXAS. Dermacentor spp. were of some concern to man in COLORADO during the 1961 season.

BLACK-LEGGED TICK (Ixodes scapularis) is becoming an important pest in ARKANSAS.

Unspecified WOOD TICKS were particularly abundant late in the year in CALIFORNIA. Cattle in some northern counties exhibited rapid, heavy infestations during October and November. Deer taken during the hunting season were heavily infested. Many dog owners also reported infestations. Unspecified ticks are important pests of livestock in ARKANSAS, especially in the mountainous sections of the State. This makes a 3-year period that ticks have been a real problem. Few reports of ticks were received in KANSAS during 1961, but ticks were quite abundant over a long period in southeastern PENNSYLVANIA.

AMERICAN DOG TICK (Dermacentor variabilis) constituted a substantial problem during mid- and late May in MAINE in the Sebago area, Cumberland County. Moderate numbers caused considerable annoyance to campowners, workers and pets. American dog tick activity in RHODE ISLAND was first noted at Newport, Newport County, and Narragansett, Washington County, on April 27. The tick was troublesome throughout that State during early summer. American dog tick was also numerous in NEW JERSEY during the season, and numbers were above normal in all sections of MARYLAND; whereas in VIRGINIA, only occasional reports of this pest were received during 1961. Complaints concerning American dog tick in INDIANA were considerably less frequent during 1961 than in 1960. Populations of this tick were high again in MISSOURI; reports of 1960 show that year to have the highest populations of 10 years and 1961 was comparable with 1960. Infestations on dogs were common in wooded sections of central and north central OKLAHOMA. American dog tick was particularly troublesome in SOUTH DAKOTA during the last part of April and through May and June in the eastern part of the State. High populations were evident with both man and animals affected by this tick. In MINNESOTA, the tick was reported the first week of May and it continued troublesome in northern areas through June. Populations were very high in some areas of the State.

Many dog owners reported infestations of BROWN DOG TICK (*Rhipicephalus sanguineus*) in CALIFORNIA. Kennel owners had many problems in controlling infestations. The tick was reported in Yellowstone County, MONTANA, from dogs brought into the State from neighboring areas. Infestations of this tick were more prevalent in Clark and Washoe Counties, NEVADA, where it appears to be spreading rapidly. Heavy populations were a problem throughout the year in many areas of ARIZONA. Ticks entered homes on dogs or crawled in from dogs resting places. Infestations of brown dog tick were generally heavy in several central and south central TEXAS counties and, in central and north central OKLAHOMA, this pest caused some concern to dogs and homeowners.

Complaints about brown dog tick in INDIANA were considerably less frequent during 1961 than during 1960, and only occasional reports were received in VIRGINIA concerning this pest. In MARYLAND, however, considerably more than the usual number of reports about this tick in homes were noted. Brown dog tick infested dogs and homes locally in RHODE ISLAND, especially during mid-August. They were especially common in CONNECTICUT during the season.

Over 8,000 cattle were treated in WASHINGTON for scabies under SCAB MITE (*Psoroptes equi*) quarantine regulations in Okanogan County. Infestations are limited, possibly to only one or two animals.

An occasional infestation of BED BUG (*Cimex lectularius*) was reported in UTAH. Bed bug infestations also occurred in Davison and Brookings Counties, SOUTH DAKOTA; 2 reports from the former county and 3 from the latter county were noted. This pest was occasionally reported as troublesome in VIRGINIA during 1961. In CONNECTICUT, bed bug infestations were noted in poultry houses in Oxford, New Haven County, and in Canterbury, Windham County.

PIGEON FLY (*Pseudolynchia canariensis*) was found on doves at Bloomington, McLean County, for the second ILLINOIS record. This fly had previously been taken in Chicago, Cook County, in 1940.

SHAFT LOUSE (*Menopon gallinae*) was common on some chicken flocks in ALASKA in the Palmer area. Unspecified POULTRY LICE were common in UTAH and NORTH CAROLINA, but few reports were received in KANSAS.

FLEAS were common in poultry houses throughout CONNECTICUT. CAT FLEA (*Ctenocephalides felis*) was somewhat more troublesome than usual in NEW HAMPSHIRE. Numerous complaints were received in late summer and early fall. DOG FLEA (*C. canis*) was reported several times in Lancaster County, NEBRASKA, during August. *Ctenocephalides* spp. were numerous in NEW JERSEY and NORTH CAROLINA, but only occasional reports were received in VIRGINIA. STICKTIGHT FLEA (*Echidnophaga gallinacea*), cat flea and HUMAN FLEA (*Pulex irritans*) were irritating to humans and pets in CALIFORNIA. Local infestations occurred over the State. Flea occurrence was very local and much lower than in past years, however.

A CHIGGER MITE (*Trombicula* sp.) was abundant in TEXAS and caused considerable discomfort to residents. Heavy activity of unspecified CHIGGERS was reported in the extreme northern part of ARIZONA in June, and heavy infestations of chiggers occurred on range turkeys in the south central area of MISSOURI during mid-August. Chiggers were quite abundant over a long period in southeastern PENNSYLVANIA.

CHICKEN MITE (*Dermanyssus gallinae*) was common on some chickens in the Palmer area of ALASKA during 1961. NORTHERN FOWL MITE (*Ornithonyssus sylvarum*) was reported for the first time in Benton and Drew Counties, ARKANSAS, during 1961. Poultry producers in CALIFORNIA had infestations of northern fowl mite in flocks which required control measures. Northern fowl mite was reported resistant to malathion-treated litter in Duplin County, NORTH CAROLINA, in November.

The problem has been studied but no definite conclusions have been reached. In general, northern fowl mite was reported abundant in North Carolina and received considerable attention. Unspecified POULTRY MITES were common in UTAH. A CANARY LUNG MITE (Sternostoma tracheacolum) was found in Harris County, TEXAS; a new State record.

Specimens of WHEEL BUG (Arilus cristatus) were received from several VIRGINIA counties during 1961, and it was reported as very numerous in PENNSYLVANIA. An ASSASSIN BUG (Triatoma sp.) appeared in heavier than normal adult populations in ARIZONA. This bloodsucking bug was a problem in some areas of Pima, Cochise and Santa Cruz Counties during late June and early July. Populations of an assassin bug (T. protracta) continued about the same as in 1960 in CALIFORNIA. More instances of humans being bitten were reported from Calaveras, Mariposa, San Diego and San Joaquin Counties. An assassin bug (Rasahus thoracicus) was particularly abundant in many of the northern counties of California. Many people were bitten in lighted outdoor areas during the summer and, in many cases, adults of this bug invaded homes.

Infestations of PUSS CATERPILLAR (Megalopyge opercularis) caused concern among inhabitants of some communities in south central and southeastern OKLAHOMA. A few children were seriously "stung" by this pest in that State. Puss caterpillar was very common in ARKANSAS in the late summer, with many reports of injuries to humans noted. It was extremely abundant in VIRGINIA, especially in the eastern part of the State. Numerous specimens were received for determination and many reports indicated that several cases required medical attention. Near-mass hysteria developed in one locality as a result of undue publicity given this pest. Puss caterpillar, CRINKLED FLANNEL MOTH (M. crispata) and a FLANNEL MOTH (Norape cretata) were very numerous in NORTH CAROLINA during the fall months. Puss caterpillar injury resulted in hospitalizing a boy at Yadkinville, Yadkin County, North Carolina, in January. HAG MOTH (Phobetron pithecium) populations were not abundant in CONNECTICUT, but it was more common in 1961 than in 1960. Larvae of hag moth and SADDLEBACK CATERPILLAR (Sibine stimulea) were very numerous in PENNSYLVANIA. Very few reports concerning the latter species were received in VIRGINIA during 1961.

An ANDRENID BEE (Andrena sp.) became established in soil around several homes in Salem, OREGON; occasionally children were stung.

A VELVET ANT (Dasymutilla occidentalis) appeared in several localities in VIRGINIA during the season.

Unspecified HORNETS and YELLOW JACKETS were generally extremely abundant and annoying in several localities throughout the northern part of IDAHO during the late summer. They were particularly numerous and annoying in the Coeur d'Alene area, Kootenai County. A HORNET (Vespula pensylvanica) was a severe nuisance in many locations over CALIFORNIA. Picnic grounds, outdoor barbecues and public parks were heavily infested. Chemical treatment was necessary to make public areas habitable. In UTAH, unspecified hornets and yellow jackets appeared as household pests. Concern about unspecified hornets and WASPS began in RHODE ISLAND in early July and continued throughout the season, and both of these pests were general and very common in CONNECTICUT. Infestations of unspecified yellow jackets and wasps were reported in MARYLAND, and were frequently reported as entering homes in VIRGINIA seeking hibernation quarters. The former were extremely abundant during the season, in the latter State, and were commonly attracted to picnic areas and trees infested with aphids. They were, in general, more numerous in Virginia during 1961 than in recent years. Also in Virginia, there was one report of a SCOLIID (Scolia dubia) stinging a child and causing considerable swelling. Unspecified wasps received considerable attention during 1961 in NORTH CAROLINA. BALD-FACED HORNET (Vespula maculata) and Vespula spp. were very abundant during September and October in PENNSYLVANIA and, what was believed to be this species, was very troublesome during late August and

September in WISCONSIN. Troublesome infestations of unspecified species of BEES and wasps were abundant in and around homes in NORTH DAKOTA during the year. Infestations appeared earlier than usual in the eastern sections of the State. Occasionally, HONEY BEE (Apis mellifera) became a household pest in UTAH.

BLACK WIDOW SPIDER (Latrodectus mactans) was more abundant than usual in PENNSYLVANIA. Control measures were necessary in several new urban housing developments where numbers of this spider were found around playgrounds. In SOUTH DAKOTA, infestations were noted in two homes in Lawrence County. This spider was of some concern in COLORADO during 1961 and was frequently reported in the fall around homes and farm buildings in UTAH. It caused much concern in the latter State, with reports of several persons being bitten and hospitalized in Utah, Salt Lake and Weber Counties. Populations of black widow spider were up over those of previous years in NEVADA. Many areas in the west central counties had heavy infestations during the fall. More than normal number of reports concerning this pest were received from southwestern areas of IDAHO during the 1961 season. Black widow spider is of common occurrence throughout CALIFORNIA. In 1961, many household infestations were reported by homeowners, particularly where small children were involved. No cases of people being bitten were reported, however.

A BROWN SPIDER (Loxosceles reclusa) was noted as being more abundant in KANSAS in 1961 than it was in 1960.

HOUSEHOLD AND STRUCTURAL INSECTS

Highlights: GERMAN COCKROACH was reported as abundant and very troublesome in a number of states, as was BROWN-BANDED COCKROACH. ORIENTAL COCKROACH was also of importance in Utah. EUROPEAN EARWIG caused annoyance to coastal residents of Maine and New Hampshire, and was a problem in areas of Colorado, Utah, Nevada, Idaho and California. Another EARWIG (Labidura riparia) was a nuisance to residents in Texas and was moderate in the Tifton area of Georgia. BOXELDER BUG was again troublesome in several states where it was reported entering homes either in the spring or fall, or both. CARPENTER ANTS were above normal abundance in Connecticut homes. PAVEMENT ANT was general in Rhode Island and abundant in Connecticut and New Jersey, as was LARGER YELLOW ANT in the latter State; and pavement ant and several other species of ants caused considerable annoyance to homeowners in Maryland. Unspecified ANTS also received considerable attention in Virginia and North Carolina. HOUSE FLY was abundant in several states. Adults of CUTWORMS (Chorizagrotis spp.) were a nuisance in areas of Texas and New Mexico. Several species of GRAIN BEETLES were annoying and caused considerable damage to home-stored products in a number of states. A JAPANESE WEEVIL (Calomycterus setarius) became unusually numerous in New Hampshire and was troublesome locally in Rhode Island. BLACK CARPET BEETLE caused considerable concern in the Matanuska Valley of Alaska and was troublesome in several other states. VARIED CARPET BEETLE was a problem in areas of Washington, Oregon and Pennsylvania. SPRINGTAILS were of considerable nuisance to homeowners in California. SUBTERRANEAN TERMITES were the most consistently encountered household pests in Indiana and infestations are reported increasing in Utah, Wyoming and Nevada. Several other states also reported troublesome populations. MILLIPEDS were numerous and of concern in Nebraska, Kansas, Maryland, Virginia and North Carolina. SOLPUGIDS were troublesome in areas of Montana, Nebraska, Colorado and Nevada. NORTHERN FOWL MITE and TROPICAL RAT MITE numbers increased and became a nuisance in homes in California. CLOVER MITE was heavy and a nuisance to residents in several areas of the country in 1961, particularly in the Atlantic and Western States, including Alaska.

GERMAN COCKROACH (Blattella germanica) appears to be periodically reintroduced into housing areas of Anchorage, ALASKA; AMERICAN COCKROACH (Periplaneta americana), however, appeared only once during 1961. COCKROACHES appeared in increasing numbers in OREGON during the year, with BROWN-BANDED COCKROACH (Supella supellectilium) heading the list. Brown-banded cockroach and other cockroaches were common during the year in CALIFORNIA, with infestations occurring statewide. Extremely light infestations were in the majority and only an occasional heavy infestation reported. Infestations of brown-banded cockroach were reported in the Blackfoot area, Bingham County, IDAHO, adding that county to the growing list on the distribution of this pest in the State. Also in Idaho, AUSTRALIAN COCKROACH (Periplaneta australasiae) was collected in a home in Liberty County. German cockroach, ORIENTAL COCKROACH (Blatta orientalis) and brown-banded cockroach infested many homes, motels and apartments over UTAH. American cockroach occasionally infested homes and other buildings. Cockroach problems have increased in Cache County homes, motels and public buildings during the past 3 years. Brown-banded cockroach and oriental cockroach are the most commonly found species in Utah. Cockroaches were reported throughout the year in SOUTH DAKOTA, infesting homes in all parts of the State. Cockroaches were reported in Meagher and Missoula Counties, MONTANA.

German cockroach and brown-banded cockroach were again troublesome in WISCONSIN as household pests throughout the State. German cockroach continued troublesome in many homes and food-handling establishments in INDIANA during 1961. Of special interest was the occurrence of significant numbers of this pest outdoors in the Ft. Wayne area, Allen County. German cockroach was abundant in NORTH CAROLINA, and German cockroach and brown-banded cockroach were again troublesome in many MARYLAND homes. German cockroach was a serious household and industrial pest control problem in NEW JERSEY, and both German cockroach and brown-banded cockroach were abundant and increasing throughout CONNECTICUT.

CRICKETS were abundant in new housing projects in CONNECTICUT. A species of a small CRICKET (Nemobius fasciatus) was very abundant in many areas of ILLINOIS in late August and early September. This cricket caused much concern around homes, motels, service stations and other structures. JERUSALEM CRICKET (Stenopelmatus fuscus) was common and caused much comment in the eastern part of MONTANA.

EUROPEAN EARWIG (Forficula auricularia) caused much annoyance and anxiety to residents in many coastal areas of MAINE and to some inland localities. This pest was somewhat less numerous in coastal communities of NEW HAMPSHIRE, but it has extended its range as far north as Jackson, Carroll County; a new county record. Nearly mature nymphs of European earwig were first observed at Cranston, Providence County, RHODE ISLAND, on June 6. Light populations occurred throughout the season, but the peak developed about mid-July. In COLORADO, European earwig was a nuisance in homes, offices and farm buildings. It invaded many homes and schoolrooms in UTAH and caused annoyance. Infestations in NEVADA were slightly above average in many western counties of the State and much above average in Elko County. This species continued abundant in many areas of IDAHO around homes. Overwintering adults first became active during late March, and the first seasonal broods were noted during April and May in that State. In CALIFORNIA, weather conditions were such that European earwig invaded homes more often than in past years. Northern counties were affected.

An EARWIG (Labidura riparia) was not as numerous as in 1960 in GEORGIA, but it caused moderate infestations in Tifton area, Tift County. In TEXAS, this earwig was abundant around homes entering them at night and causing concern among residents.

BOXELDER BUG (Leptocoris trivittatus) was troublesome in homes during early April in the Manville area of Providence County, RHODE ISLAND. This bug invaded homes in the central sections of MARYLAND during early spring; was frequently reported entering homes for hibernation in VIRGINIA; and required considerable attention

in NORTH CAROLINA. It was abundant in and around homes in most areas of SOUTH DAKOTA during the fall and large numbers migrated to homes in NEBRASKA during October. Boxelder bug was also a nuisance in homes, offices and farm buildings in COLORADO, and it caused annoyance in UTAH by invading homes and schoolrooms. In MONTANA, this bug became annoying in scattered areas over the State. A COREID BUG (Leptocoris rubrolineatus) invaded CALIFORNIA homes in mass migrations early in the year and were a local problem, particularly where boxelder or maple trees were near homes.

FALSE CHINCH BUG (Nysius ericae) invaded many homes and schoolrooms in UTAH, causing annoyance. A LYGAEID BUG (Peritrechus tristus) invaded homes in Coquille, Coos County, OREGON, during March. A BAT BUG (Cimex pilosellus) was a nuisance in some homes, offices and farm buildings in COLORADO.

Scattered concentrations of HACKBERRY NIPPLE GALL (Pachypsylla celtidismamma) in NEBRASKA occurred on screens of homes in the eastern area during October. Hackberry nipple gall and another PSYLLID (P. vesicula) became a nuisance in the Kansas City area, Wyandotte County, KANSAS, in October and early November. LEAFHOPPERS were very common in many locations of CALIFORNIA and were a source of irritation to housewives during the warm periods of the year when windows were open.

Infestations of BLACK CARPENTER ANT (Camponotus pennsylvanicus) were evident locally in RHODE ISLAND homes in mid-July. An extremely heavy swarm occurred in West Kingston, Washington County, on September 26. CARPENTER ANTS (Camponotus spp.) were generally distributed in CONNECTICUT and above normal abundance in houses. A wet spring in VERMONT caused carpenter ants to be active. A heavy infestation of carpenter ants was reported in Cass County, NORTH DAKOTA, in a farm home, and damage to window casings was also reported in a home in Fargo. Winged adults of carpenter ants were encountered frequently in many northern areas of IDAHO during May, but population levels were well below those highs encountered during 1958. Carpenter ants damaged timbers in rough lumber construction in various parts of ALASKA.

Both THIEF ANT (Solenopsis molesta) and PHARAOH ANT (Monomorium pharaonis) became pests of some households in TEXAS. Winged forms of PAVEMENT ANT (Tetramorium caespitum) appeared generally in RHODE ISLAND in early July. Pavement ant was very abundant in CONNECTICUT and infested many houses. It was also abundant in NEW JERSEY as a household pest, as was LARGER YELLOW ANT (Acanthomyops interjectus). In MARYLAND, pavement ant, Acanthomyops spp. and Monomorium spp. caused considerable annoyance to homeowners in all sections of the State. A large number of winged forms of unspecified ANTS were received for determination in VIRGINIA during 1961, primarily because they were suspected of being termites. Most of the ants were collected in or around homes. Unspecified ants were abundant and received attention in NORTH CAROLINA. Complaints of ants were received in about normal numbers in NEW HAMPSHIRE.

A HORNTAIL (Urocerus flavicornis) caused concern in ALASKA in the Tanana and Matanuska Valleys by emerging from rafters of recently cut spruce and leaving visible holes in the walls. Horntails (Sirex spp.) were destructive in CALIFORNIA to new dwellings where green lumber was used.

CAT FLEA (Ctenocephalides felis) infestations were common in INDIANA wherever cats or dogs were kept indoors. Complaints were common during summer and early fall. Infestations of Ctenocephalides spp. in cellars, garages, homes and yards were numerous in scattered areas throughout RHODE ISLAND, especially during mid-July. Unusually large numbers of unspecified fleas infested homes in VERMONT during the late summer and fall.

Late summer populations of HOUSE FLY (Musca domestica) were heavy in the southern area of RHODE ISLAND. House fly was a nuisance in homes and business establishments of NEW JERSEY and were very high in the same kind of places in MARYLAND.

Infestations in ARKANSAS were heavier in 1961 than in 1960. Annoying populations of house fly were present in homes and buildings in OKLAHOMA in the north central area by mid-March. Populations remained below normal throughout mid-June, but reached a peak of activity in late June. During July and August, populations in Oklahoma showed a downward trend until early September when populations increased. By late September and early October, flies were becoming more numerous in sheltered areas as colder weather prevailed. High populations caused considerable trouble in MISSOURI from mid-August to mid-September around homes. Moderate to high populations occurred in NORTH DAKOTA in late summer and early fall. Populations varied considerably, locally, in CALIFORNIA but were generally not severe.

Small numbers of FACE FLY (Musca autumnalis) occurred in rural homes in INDIANA throughout the summer. Heavy fall invasions that were noted in some areas during September 1960, did not materialize until October during the 1961 season. In PENNSYLVANIA, face fly was abundant in attics. The fly that was abundant around homes in Smithfield area, Providence County, RHODE ISLAND, was probably LITTLE HOUSE FLY (Fannia canicularis). CLUSTER FLY (Pollenia rudis) invaded many homes in UTAH and was abundant in attics in PENNSYLVANIA. Numerous reports of MOTH FLIES were received during early August from areas throughout MISSOURI, where they were causing a nuisance around homes. High populations of VINEGAR FLIES (Drosophila spp.) were a decided household nuisance in CALIFORNIA during the fruit and melon season.

Adults of ARMY CUTWORM (Chorizagrotis auxiliaris) were extremely numerous during the spring months in NEW MEXICO and large numbers were attracted to lights at which places they became a nuisance in homes and buildings. Adults of a CUTWORM (Chorizagrotis inconcinna) occurred again in heavy flights in the western areas of TEXAS and annoyed residents by spotting walls and draperies. A PSYCHID MOTH (Apterona crenulella) again infested the outsides of a few homes in the northern part of UTAH during 1961.

INDIAN MEAL MOTH (Plodia interpunctella) was generally abundant as a pantry pest in NEW JERSEY during 1961 and caused damage to home-stored foods in UTAH.

Both CASEMAKING CLOTHES MOTH (Tinea pellionella) and WEBBING CLOTHES MOTH (Tineola bisselliella) were noted in Cass County, NORTH DAKOTA. A heavy population of the former caused severe damage to rolled carpeting stored in a home at Fargo. The latter pest caused light damage to a carpet in the same city. Webbing clothes moth was reported as abundant in NORTH CAROLINA, and unspecified CLOTHES MOTHS appeared as household pests in UTAH.

DRUGSTORE BEETLE (Stegobium paniceum) caused serious damage to home furnishings and food products in OREGON and was very active in CALIFORNIA homes. CIGARETTE BEETLE (Lasioderma serricorne) was usually numerous in home-stored foods in DELAWARE and infested the same kind of products in scattered areas of TEXAS.

An ANOBIID BEETLE (Hadrobregmus carinatus) caused severe damage to a barn in Anne Arundel County, MARYLAND. Joists of poplar wood had been so damaged that they broke. In PENNSYLVANIA, this same species caused considerable damage to museum floors, beams and many wooden museum pieces.

OREGON FIR SAWYER (Monochamus oregonensis) caused concern in ALASKA in the Tanana and Matanuska Valleys by emerging into rooms of homes from rafters and beams of recently cut spruce and leaving visible holes in walls. OLD-HOUSE BORER (Hylotrupes bajulus) and a ROUNDHEADED WOOD BORER (Smodicum cucujiforme) were noted in MARYLAND; the former species was common in all sections of the State and the latter caused a heavy infestation in oak timbers in a home at Gambler, Carroll County. Another ROUNDHEADED WOOD BORER (Arhopalus productus) was destructive to new homes in CALIFORNIA where green lumber was used. Emerging beetles left holes in floors, walls, rugs and linoleum. As many as 50 emergence holes in a single residence were reported.

ELM LEAF BEETLE (Galerucella xanthomelaena) was more common in CONNECTICUT homes in the fall of 1961 than in 1960.

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) caused serious damage to home-stored food and also caused annoyance in OREGON, UTAH, WISCONSIN, DELAWARE, NEW JERSEY and PENNSYLVANIA during the 1961 season. In the last-named State, FOREIGN GRAIN BEETLE (Ahasverus advena) was also a pest.

Only a few reports of ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) were received in VIRGINIA. This species was attracted to lights and became a nuisance in homes. In OHIO, this weevil caused local annoyance in Washington, Pike and Athens Counties by entering homes in numbers in September. STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) invaded homes in Liberty and Lewis and Clark Counties, MONTANA. A JAPANESE WEEVIL (Calomycterus setarius) was unusually numerous in NEW HAMPSHIRE, with troublesome populations encountered in 5 new localities in the State. This weevil became evident in RHODE ISLAND about July 10 and was troublesome, swarming on foundations of homes in Cumberland area, Providence County, by the end of July. A WEEVIL (Trachyploeus bifoveolatus) became a household pest in Snohomish and King Counties, WASHINGTON.

GRANARY WEEVIL (Sitophilus granarius) damaged stored foods in homes in UTAH and caused a nuisance in kitchens and pantries.

BLACK CARPET BEETLE (Attagenus piceus) caused considerable damage to wool clothing in the Matanuska Valley area of ALASKA. It was one of the principal pests of household stored products in WISCONSIN, PENNSYLVANIA and NEW JERSEY. In MARYLAND, this species and FURNITURE CARPET BEETLE (Anthrenus flavipes) caused considerable concern to homeowners in all sections of the State. VARIED CARPET BEETLE (Anthrenus verbasci) became a widespread household pest in Yakima County, WASHINGTON, and caused serious damage to home furnishings and food products in OREGON; and increased considerably in PENNSYLVANIA.

Various species of DERMESTID BEETLES were reported infesting and causing annoyance in homes in CALIFORNIA, UTAH, MONTANA, NORTH DAKOTA and CONNECTICUT. A CRYPTOPHAGID BEETLE (Cryptophagus sp.) infested residences in a few locations in northern CALIFORNIA.

TULE BEETLE (Agonum maculicolle) was more of a nuisance than in past years in CALIFORNIA. Adults were attracted to lights and invaded homes in the San Joaquin and Sacramento Valleys. Infestations were for short periods and control measures were ineffective.

Heavy infestations of undetermined species of POWDER-POST BEETLES occurred in oak flooring of a York County, MAINE, home; damage observed in January 1961 was not estimated. Complaints about powder-post beetles in NEW HAMPSHIRE were received in about the usual number. Lyctus spp. particularly damaged flooring and hardwood furniture in OREGON. A POWDER-POST BEETLE (Lyctus africanus) and FALSE POWDER-POST BEETLES (Dinoderus brevis and D. minutus) damaged bamboo drapes and furniture on several occasions in CALIFORNIA.

SAP BEETLES were of less concern in WISCONSIN to homeowners than in the previous season. Carpophilus spp. were of temporary concern to many housewives in CALIFORNIA during the summer months, and many housewives expressed concern that sap beetles might become permanent pests.

The first record of WHARF BORER (Nacerdes melanura) being abundant and a nuisance in NORTH DAKOTA was noted this past year; it was reported in 2 office buildings in Fargo, Cass County.

A SPIDER BEETLE (Mezium affine) was discovered infesting a basement in WYOMING at Worland, Washakie County, on June 2, for a new State record. No further

infestations were found during the remainder of the year. Unspecified SPIDER BEETLES were numerous in several Anchorage, ALASKA, homes, and they were an annoyance in kitchens and caused damage to stored foods in UTAH. Ptinus spp. became pests in some homes in TEXAS and were a nuisance in homes in Curry and Roosevelt Counties, NEW MEXICO, during July and August.

RED TURPENTINE BEETLE (Dendroctonus valens) became a household pest in RHODE ISLAND when numerous adults were found resting on a house in Smithfield, Providence County, in early May. They were apparently attracted to fresh paint.

CONFUSED FLOUR BEETLE (Tribolium confusum) was unusually numerous this past season in DELAWARE in home-stored food products, and adults infested flour in several MARYLAND homes. In UTAH, this species was a nuisance in kitchens and pantries and attacked stored food in homes. RED FLOUR BEETLE (T. castaneum) caused serious damage to food products in homes in OREGON.

An infestation of a LATHRIDIID BEETLE (Cartodere sp.) developed in a remodeled historic house in Providence, Providence County, RHODE ISLAND, in late July.

Adults of unspecified SNAKEFLIES were reported invading homes in Marin County, CALIFORNIA, and biting residents in November. Also in California, SPRINGTAILS created considerable nuisance by invading homes in many locations. New subdivisions were most affected.

A DRYWOOD TERMITE (Kalotermes minor) infestation was discovered in furniture in Fort Smith, Sebastian County, ARKANSAS. Eradicative treatment was applied to the infested home. It is believed that this species is incapable of maintaining itself in this area. A ROTTENWOOD TERMITE (Zootermopsis angusticollis) caused considerable damage in OREGON during 1961. EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) swarmed in RHODE ISLAND, and alates were especially noticed during April. Flight of this species was heavy, as usual, in NEW JERSEY from late March into June. Eastern subterranean termite was reported as abundant and received considerable attention in NORTH CAROLINA. SUBTERRANEAN TERMITES (Reticulitermes spp.) again caused considerable concern and losses in all sections of MARYLAND. They were also the most consistently encountered household pests in INDIANA. Questions received throughout the year in that State indicate a definite interest in preventive treatment in new construction. Reticulitermes sp. was of some direct concern to man in COLORADO during the 1961 season. Subterranean termites again damaged many homes and other buildings throughout UTAH; termite damage appears to increase each year in that State. More infestations were reported and more requests for control of Reticulitermes spp. were received in NEVADA than in previous years. In WYOMING, numerous infestations of a subterranean termite, probably WESTERN SUBTERRANEAN TERMITE (Reticulitermes hesperus), were found in buildings throughout the State during 1961. Considerable damage was reported in many instances. This pest is rapidly becoming a serious problem to residents in the State. Some infestations of western subterranean termite were reported in IDAHO in Canyon County during April. Western subterranean termite caused considerable damage in OREGON during 1961. Unspecified TERMITES were considered the most important structural wood insects in VIRGINIA during 1961 and were reported from 43 towns and cities in CONNECTICUT. Complaints of termites in NEW HAMPSHIRE were received in about the usual numbers and the pests were found in Sullivan County for the first time in December. Several termite infestations occurred in Dawson and Lewis and Clark Counties, MONTANA.

PILLBUGS appeared in many homes in Valley, Deer Lodge, Yellowstone and Prairie Counties, MONTANA.

MILLIPED populations were very high in NEBRASKA where they migrated into residential buildings in the southern area during September and caused concern to homeowners. They were also very numerous throughout KANSAS and entered homes, motels and other buildings, and congregated in abundance along foundation walls. Millipeds caused concern in MARYLAND, VIRGINIA and NORTH CAROLINA.

Specimens of HOUSE CENTIPEDE (*Scutigera coleoptrata*) were determined from several counties in VIRGINIA during the 1961 season. There were several complaints in mid-May in Wakefield area, Washington County, RHODE ISLAND, concerning this pest in homes. Infestations of CENTIPEDES were reported in MARYLAND.

A SOLPUGID (*Eremobates pallipes*) caused alarm in a Chase County, NEBRASKA, home. Unspecified SOLPUGIDS were reported as a nuisance in homes, offices and farm buildings in COLORADO and were more numerous than usual in Douglas, Ormsby, Pershing and Washoe Counties, NEVADA. They became abundant in many areas of MONTANA and invaded homes in Wilboux, Yellowstone, Park, Liberty, Dawson, Roosevelt, Teton and Sheridan Counties.

Adults of FOWL TICK (*Argas persicus*) invaded a residence in Sacramento, Sacramento County, CALIFORNIA. This pest was common on ranch properties in desert areas of Riverside and Imperial Counties. Also in California, household invasions by BROWN DOG TICK (*Rhipicephalus sanguineus*) were quite common again this past season.

Both NORTHERN FOWL MITE (*Ornithonyssus sylviarum*) and TROPICAL RAT MITE (*O. bacoti*) became a nuisance in homes in CALIFORNIA and both species appear to be more abundant. Tropical rat mite caused extreme annoyance, particularly in northern California. Tropical rat mite infested a home in the south central area of TEXAS and annoyed the residents with its bite.

MUSHROOM MITE (*Tyrophagus putrescentiae*) infested cabinets in a home in the central area of TEXAS.

WINTER GRAIN MITE (*Penthaeus major*) became a nuisance in a few homes in the southeastern part of KANSAS.

CLOVER MITE (*Bryobia praetiosa*) was an increasing nuisance in ALASKA at Anchorage and Palmer, as well as on military bases. Heavy populations of clover mite invaded homes in many areas of CALIFORNIA from February to June, creating much nuisance to homeowners. Occurrence of this mite is about the same as in past years. Numerous reports concerning this pest around homes were made in IDAHO during March, April and May. It was particularly abundant around homes in the Caldwell area, Canyon County; Idaho Falls area, Bonneville County; and Weiser area, Washington County. Clover mite invaded homes in Richland, Powder River, Fergus, Hill, Park, Blaine, Rosebud, Sheridan, Teton, Gallatin, Petroleum, Yellowstone and Valley Counties, MONTANA. Heavy populations of clover mite that caused damage to lawns were a source of annoyance to homeowners throughout WYOMING during 1961. Clover mite was unusually abundant in UTAH. Several thousand homes were invaded by this pest in the spring. It was also a nuisance in homes, offices and farm buildings in COLORADO. This mite was especially troublesome during February in NEW MEXICO in northern counties where it entered homes in large numbers as weather became warm then turned cold again. This mite annoyed residents in Mitchell County, TEXAS. Few complaints were received in KANSAS concerning this pest. Moderate numbers were noted in NEBRASKA during October. Several heavy populations were reported invading homes in both eastern and western areas of NORTH DAKOTA during the spring months. Clover mite was very troublesome in homes in RHODE ISLAND during the early spring. Complaints about this pest were especially numerous during April. This mite was also very common in CONNECTICUT. Clover mite was abundant in both the spring and fall in NEW JERSEY. In PENNSYLVANIA, however, clover mite was not so abundant as usual although it was troublesome during the fall. In MARYLAND and VIRGINIA, this pest caused considerable concern to homeowners.

STORED-PRODUCT INSECTS

Highlights: KHAPRA BEETLE was found in only 2 states in 1961, those being California and Arizona. As of the end of the year, all infestations had been eradicated. The usual number of other stored-product pests were reported as damaging during the year in various parts of the country. Those most frequently mentioned were INDIAN-MEAL MOTH, DERMESTIDS, SAW-TOOTHED GRAIN BEETLE, GRANARY WEEVIL and FLOUR BEETLES (Tribolium spp.).

STORED-PRODUCT INSECTS were more prevalent and apparently occurred in shorter cycles than normal in CALIFORNIA and continued as a nuisance in entire year. No significant change or known developments in stored-grain insects occurred in ARKANSAS compared with 1960. Many elevators in the white club wheat area of southeastern WASHINGTON were emptied during the past winter under increased overseas exports. Where good cleanup of empty bins and residual treatments were applied before the 1961 crop was binned, insect problem should be minimal. Stored-product insects were very common in stored grains in CONNECTICUT.

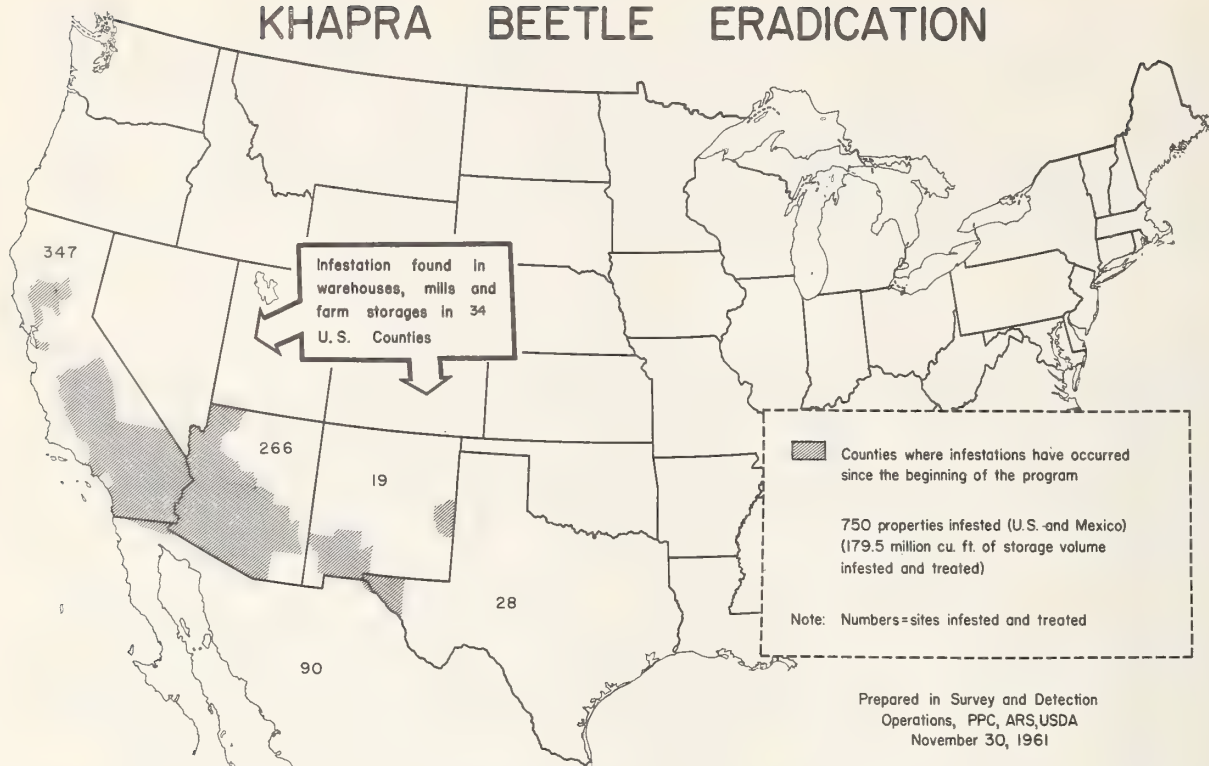
INDIAN-MEAL MOTH (Plodia interpunctella) was commonly reported as infesting stored products in homes, stores and barns in VIRGINIA, and infestations were reported in homes in all sections of MARYLAND. Light, larval infestations were observed in several commercial grain storage units in eastern NORTH DAKOTA and larvae were reported in stored grain in Sully, Yankton and Brookings Counties, SOUTH DAKOTA, during the fall. The pest was collected in Lewis and Clark County, MONTANA, and infestations occurred in shelled corn in southeast WYOMING. Rapid and effective control measures prevented serious damage in the latter State. Indian-meal moth was a problem in elevators, metal bins and flat storage areas containing wheat, corn and sorghum in KANSAS and it attacked stored grain in TEXAS. Larvae and adults of Indian-meal moth were very abundant in stored grain checked for khapra beetle (Trogoderma granarium) in NEW MEXICO, especially in the southern counties. This meal moth caused damage in grain mills, seed- and feed-stores and granaries in UTAH, and some grocery stores also became infested in the latter State. The pest was found in home-stored cereal materials in CALIFORNIA and caused many inquiries concerning control.

ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) continued as the most important pest of stored small grains and corn in all sections of MARYLAND, but only an occasional report of an infestation was received in VIRGINIA. The pest was also reported as a pest of stored grain in TEXAS, and limited damage occurred to some farm-stored products in OKLAHOMA. Angoumois grain moth was found in home-stored cereal materials in CALIFORNIA and was the subject of many inquiries regarding control.

MEAL MOTH (Pyrallis farinalis) was collected in Cascade County, MONTANA, and MEDITERRANEAN FLOUR MOTH (Anagasta kuhniella) was occasionally reported in VIRGINIA. However, both of these species were found in home-stored cereal materials in CALIFORNIA, and many inquiries were received regarding control of both. Infestations of a PYRALID MOTH (Aglossa caprealis) were reported in MARYLAND and VIRGINIA.

KHAPRA BEETLE (Trogoderma granarium) was found in only two states during 1961. As of the end of the year, however, all infestations had been treated and none were known to exist in the United States. In CALIFORNIA, 5 properties were found infested during May, all of which were successfully fumigated. There have been 347 known infested properties since the beginning of the eradication program in that State, involving some 84,753,594 cubic feet of fumigation. During 1961, 22,970 properties were inspected in California. Several new or reinfestations were discovered during the year in ARIZONA. The map on the following page gives the status of the program as of November 30, 1961.

KHAPRA BEETLE ERADICATION



The khapra beetle survey in WASHINGTON, which was made during the fall of 1960 and spring of 1961, revealed the following DERMESTIDS: Trogoderma inclusum in Whitman County, T. simplex in Walla Walla County, T. parabile in Clark County, T. glabrum in Yakima County and VARIED CARPET BEETLE (Anthrenus verbasci) in Yakima and Thurston Counties. In CALIFORNIA, 8 species of Trogoderma have been recorded, none of which possess the destructive powers of khapra beetle. They are T. parabile, T. sternale, T. ornatum, T. glabrum, T. inclusum, T. grassmani and T. simplex. Numerous species of Trogoderma were collected in all parts of COLORADO, but none were khapra beetle. Light to heavy infestations of Trogoderma spp., other than khapra beetle, were reported on several occasions during 1961 in ARIZONA, and T. parabile was encountered more frequently than any other species of Trogoderma in NEVADA during 1961. Khapra beetle surveys in OKLAHOMA continued to be negative during 1961. Trogoderma spp. caused damage in grain mills, seed- and feedstores and granaries in UTAH, and some grocery stores also became infested in that State. DERMESTIDS were a problem in only a few flat storage units in KANSAS. Occasional infestations of varied carpet beetle and FURNITURE CARPET BEETLE (Anthrenus flavipes) were reported in VIRGINIA, and Anthrenus sp., Attagenus sp. and Perimegatoma sp. were found in association with other insects in stored grain and warehouse inspections in CALIFORNIA. BLACK CARPET BEETLE (Attagenus piceus) commonly infested stored products in homes, stores and barns during 1961 in VIRGINIA; and heavy infestations of the pest were found in stored barley in several granaries in Sheridan, Goshen and Platte Counties, WYOMING.

DRUGSTORE BEETLE (Stegobium paniceum) commonly infested stored products in homes, stores and barns in VIRGINIA and the pest was found associated with other insects in stored grain and warehouse inspections in CALIFORNIA. CIGARETTE BEETLE (Lasioderma serricorne) was common in homes, stores and barns in VIRGINIA and infested various cereals and spices in all sections of MARYLAND. It was also a common pest of foodstuffs in CALIFORNIA residences, causing irritation to many housewives. Cigarette beetle was also frequently found in prepared foodstuffs in ALASKA.

LESSER GRAIN BORER (*Rhyzopertha dominica*) attacked stored grain in TEXAS and was reported in Baca County, COLORADO. It was a problem in only a few flat storage units and metal bins in KANSAS.

SAW-TOOTHED GRAIN BEETLE (*Oryzaephilus surinamensis*) was again common and infested stored nuts, grains and cereals in many homes throughout MARYLAND, and was common in VIRGINIA. The pest was reported attacking stored grain in TEXAS and caused limited damage to some farm-stored products in OKLAHOMA and KANSAS. An infestation of saw-toothed grain beetle was heavy in sacked commercial feed held in storage in Lancaster County, NEBRASKA, and two reports of this pest doing damage to stored grain in Spink County, SOUTH DAKOTA, were received. Heavy infestations occurred in many bins of stored grain throughout WYOMING, particularly in the southeast. Examination of trucks moving grain within the State revealed many infestations. Infestations were also reported in many areas of COLORADO where wheat and other grains were stored. The beetle caused damage in grain mills, seed-and feedstores and granaries in UTAH, and it was discovered in stored grain in Lincoln, McCone and Blaine Counties, MONTANA. Heavy infestations of saw-toothed grain beetle were found in Navajo and Coconino Counties, ARIZONA, during the fall and the insect was found in association with other insects in stored grain and warehouses in CALIFORNIA. Saw-toothed grain beetle was commonly encountered in stored grains in IDAHO, but was not serious; and light infestations of the pest were observed in shipments and a number of carloads required fumigation in WASHINGTON. The insect was also frequently encountered in prepared foodstuffs in ALASKA.

FLAT GRAIN BEETLE (*Cryptolestes pusillus*) was the most prevalent beetle in bran in KANSAS, reported attacking stored grain in TEXAS and commonly encountered in stored grain in IDAHO.

GRANARY WEEVIL (*Sitophilus granarius*) was found in association with other insects in warehouses and stored grain in CALIFORNIA, as was RICE WEEVIL (*S. oryzae*). Granary weevil was commonly encountered in stored grain in IDAHO, and was discovered in stored winter wheat in Glacier County, MONTANA. Granary weevil was damaging in UTAH; reported from many areas of COLORADO where wheat and other grains were stored; caused limited damage to some farm-stored products in OKLAHOMA; attacked stored grain in TEXAS; and infested unprotected stored grains in all sections of MARYLAND. Rice weevil also caused limited damage to some farm storage in OKLAHOMA and attacked stored grain in TEXAS.

CADELLE (*Tenebroides mauritanicus*) was reported attacking stored grain during 1961 in TEXAS.

CONFUSED FLOUR BEETLE (*Tribolium confusum*) adults infested flour in several homes over MARYLAND and the pest was common in stored products in homes, stores and barns in VIRGINIA. A heavy infestation was noted in feed oats at Williston, Williams County, NORTH DAKOTA; and adults and larvae of the beetle were damaging a variety of stored products throughout 1961 in all areas of SOUTH DAKOTA. Confused flour beetle was the third most important beetle in bran in KANSAS during the year, and limited damage occurred to some farm-stored products in OKLAHOMA. It was also reported as a pest of stored grain in TEXAS. Infestations were reported in many areas of COLORADO where wheat and other grains were stored; and the pest caused damage in grain mills, seed-and feedstores and granaries in UTAH. Some grocery stores in the latter State were also infested.

RED FLOUR BEETLE (*Tribolium castaneum*) was frequently found infesting prepared foodstuffs in ALASKA and was observed in shipments of grain in WASHINGTON, some of which required fumigation. Red flour beetle was a pest of stored grain in IDAHO, but was not serious. However, the pest heavily infested granaries throughout WYOMING although little control was applied. Red flour beetle was the second most important pest of bran in KANSAS, and heavy infestations of the beetle occurred in some ARIZONA warehouses and mills, with the heaviest activity

occurring during the winter months. Red flour beetle was frequently found in VIRGINIA during the year. FLOUR BEETLES (Tribolium spp.) appeared in Fergus and Dawson Counties, MONTANA.

YELLOW MEALWORM (Tenebrio molitor) was occasionally reported during the year in VIRGINIA, and it was discovered in Carbon and Lewis and Clark Counties, MONTANA. A heavy infestation of a DARKLING BEETLE (Alphitophagus bifasciatus) occurred on stored sorghum seed in Yavapai County, ARIZONA, during the spring.

GRAIN MITE (Acarus siro) was collected in Liberty and Stillwater Counties, MONTANA.

A STORED-PRODUCT INSECT survey was conducted in May in OHIO to determine the kinds and relative abundance of insects associated with waste grain product accumulations in grain elevators and feed mills. A total of 117 quart samples of spilled grain, feed and miscellaneous material was collected in 70 counties and retained for at least a month to allow insects to develop. Careful screenings revealed the following insects in order of occurrence (numbers in parentheses refer to number of establishments in which each insect was found): Black carpet beetle (Attagenus piceus) (102); saw-toothed grain beetle (Oryzaephilus surinamensis) (44); yellow mealworm (Tenebrio molitor) and DARK MEALWORM (T. obscurus) (43); granary weevil (Sitophilus granarius) (42); cadelle (Tenebroides mauritanicus) (35); flat grain beetle (Cryptolestes pusillus) (30); DEPRESSED FLOUR BEETLE (Palorus subdepressus) and P. ratzeburgi (23); Mediterranean flour moth (Anagasta kuhniella) (16); and rice weevil (Sitophilus oryzae) (8). In addition, at least 19 other species were found in 6 or fewer locations.

BENEFICIAL INSECTS

Highlights: LADY BEETLES were frequently mentioned as being of considerable importance in controlling aphid infestations in different areas of the United States. They were late in building up in some areas, however, because of the cool, wet spring weather. PUNCTUREVINE WEEVILS (Microlarinus spp.) were released in California, Nevada and New Mexico for the control of puncturevine. They apparently became established in these states. A GORSE WEEVIL (Apion ulicis) has become established in northern California and expanded its range in Coos County, Oregon. KLAMATHWEED BEETLES have been reported effective in California. Several PARASITIC HYMENOPTERONS were reported as being of importance in various areas of the country during 1961. Several of these hymenopterons were released in certain areas to help control pea aphid. Parasitism of European corn borer by a TACHINA FLY (Lydella grisescens) increased in Kansas, and empty pupal cases of the parasite were frequently found in eastern and southeastern Nebraska during 1961. LACEWINGS, DAMSEL BUGS and FLOWER BUGS were reported as being important predators in several states.

LADY BEETLE populations were about normal in IDAHO and were predaceous on nymphs of pear psylla (Psylla pyricola) in WASHINGTON, but were not sufficiently numerous in this latter State to prevent early season damage by pear psylla to pears. Various species of lady beetles were the most numerous and effective predators of aphids during the 1961 season in NEVADA and various species were abundant on crops throughout WYOMING during 1961. Large populations were found in alfalfa, potatoes, beans and corn in the latter State, the largest numbers being encountered in alfalfa during June and July. Hippodamia spp., primarily CONVERGENT LADY BEETLE (H. convergens), were commonly encountered on several crops during the year in ARIZONA. Scymnus sp. controlled mite infestations in mulberry trees in Maricopa County, Arizona. Hippodamia spp. were of considerable benefit in COLORADO, controlling aphids on field crops, vegetables and ornamental shrubs.

This same genus of lady beetles was first noted during the season in NEBRASKA in mid-April. Large populations built up in the northeast area of the State in early June, coinciding with the heavy pea aphid (Macrosiphum pisi) outbreak. Development of these lady beetles was hampered early in the year by cool, wet weather. Scattered, local populations continued the remainder of the season in Nebraska, building up especially in corn infested with corn leaf aphid (Rhopalosiphum maidis). Various species of lady beetles, primarily convergent lady beetle and Coleomegilla maculata fuscilabris, were present in normal numbers during 1961 in KANSAS. These species, along with other predators, were chiefly responsible for the 46.2 percent reduction of first-brood European corn borer (Ostrinia nubilalis) in the State. Several species of lady beetles were present in usual numbers in OKLAHOMA, and several species were present in cotton fields in ARKANSAS during the year.

Lady beetles, primarily Coleomegilla maculata fuscilabris, convergent lady beetle, Hippodamia parenthesis, H. tredecimpunctata and Coccinella novemnotata, built up rather slowly in pea aphid-infested fields in ILLINOIS during May. They increased more rapidly in early June and, along with weather and chemical treatments, had almost wiped out the aphids by late June. Larval populations of the lady beetles at this time ran as high as 660 per 100 sweeps. In August, lady beetles were abundant in some corn fields where corn leaf aphid was present in small numbers. Lady beetles were common on alfalfa and clover throughout VIRGINIA and were probably instrumental in keeping aphid populations in check. C. novemnotata and convergent lady beetle were the most common species observed. Overwintering forms of Coleomegilla maculata were the most often encountered species and were also reported as being active on various shade trees, in association with aphid infestations in Virginia.

PUNCTUREVINE WEEVILS (Microlarinus spp.) releases were made during the year in CALIFORNIA which is encouraging, since the weevils apparently became established. Two species, M. lareyniei and Microlarinus sp., probably lypriformis, were released in Clark County, NEVADA, during July for the control of puncturevine. The same two species were released in Pima County, ARIZONA, during the summer. Surveys in December indicated that both species have become established in that area of Arizona.

A GORSE WEEVIL (Apion ulicis) has become established in a few northern counties of CALIFORNIA where gorse is a problem. The weevil has expanded its range in Coos County, OREGON. A number of releases have been made in Curry and western Lane Counties in the latter State, but the weevils have not developed effective populations to control gorse in those areas. A WEEVIL (Smicronyx interruptus) caused galls on dodder in Walla Walla County, WASHINGTON; and larvae of a ROUND-HEADED WOOD BORER (Crossidius pulchellus) were found to be very abundant in roots of snakeweed in rangeland areas of Torrance and Guadalupe Counties, NEW MEXICO.

KLAMATHWEED BEETLES, Chrysolina quadrigemina, C. geminata and Agrilus hyperici, were very active in Klamathweed during the year in CALIFORNIA. Many thousands of acres of grazing ground have now been restored by the beetles.

A CINNABAR MOTH (Tyria jacobaeae), introduced into Linn and Polk Counties, OREGON, for tansy ragwort control in 1960, has maintained its colonies, but is not considered firmly established at this time. The moth has also apparently become established in a very local area on tansy ragwort in CALIFORNIA, but sufficient buildup has not developed to evaluate the control of the weed as yet. Also in California, a SCOTCH-BROOM TIP MOTH (Leucoptera spartifoliella) has become established in two areas where Scotch-broom is encroaching on range and forest lands.

Various species of PARASITIC WASPS were observed in small numbers in some pea aphid-infested fields in southern ILLINOIS in late April. Populations increased rapidly,

and numbers were fairly abundant in both northern and southern area clover and alfalfa fields in late May and June. Many parasitic wasps were very important in cotton fields in ARKANSAS, especially as parasites of aphids.

Several PARASITIC BRACONIDS were important during 1961 in the United States. In IDAHO, two important parasites of pea aphid, Praon simulans and Aphidius pisivorus, were commonly encountered in the Clearwater River area during June and early July in fields infested with pea aphid. Additionally, the imported parasite, Aphidius smithi, was recovered in numbers during June and early July in areas of Idaho which had colony releases during May. However, no parasites were recovered in pea aphid-infested areas following the resurgence of pea aphid populations during September in the State. In OREGON, two shipments numbering several hundred specimens of Aphidius sp., a parasite of pea aphid, were released on a university farm near Corvallis, Benton County, on April 23. A release of 600 A. smithi was made near Hermiston, Umatilla County, Oregon, on May 5. Aphidius pisivorus was found in widely scattered alfalfa fields in Walla Walla County, WASHINGTON, by the end of April. Also in Washington, Apanteles solitarius was commonly found on light infestations of satin moth (Stilpnotia salicis) on San Juan Island which in turn was heavily parasitized by a secondary parasite. The braconids, Trioxys utilis and Praon palitans, two parasites of spotted alfalfa aphid (Therioaphis maculata), were commonly encountered during the year in ARIZONA. A. smithi, and possibly another species of Aphidius, parasitized pea aphid in alfalfa in Arizona. In OKLAHOMA, light populations of Aphidius testaceipes were becoming common in most areas by March. Peak activity occurred during April and May, when medium to heavy numbers were common in most small grain areas. In some cases, complete control of aphids in small grain was achieved. High percentages of control of aphids were also achieved on ornamentals in the southeastern area of Oklahoma. Up to 10 percent of corn leaf aphids were "mummified" in north central areas of the State.

Another PARASITIC BRACONID (Aphaereta pallipes) was present in puparia of face fly (Musca autumnalis) during 1961 in MISSOURI. The percentage of parasitism in 3 groups of face fly larvae collected in the central area of that State during August and September ranged from 24 to 84 percent, with average of 57 percent of the maggots affected. The parasite could not emerge from face fly pupae naturally. Results of the survey to determine distribution and natural hosts of this parasite showed that A. pallipes naturally infested 2 other species of cow manure inhabiting flies in the central area of Missouri. The host species are Orthellia caesarion and Sarcophaga derelicta. The braconid emerged naturally from these latter two hosts.

A EULOPHID (Aphelinis semiflavis), a parasite of spotted alfalfa aphid, was commonly encountered during 1961 in ARIZONA; and a PTEROMALID (Halticoptera aenea), a parasite of leaf miners, was abundant in alfalfa in the Dexter area of Chaves County, NEW MEXICO. Larvae of alfalfa weevil (Hypera postica) were found 30 to 60 percent infested with an ICHNEUMONID (Bathyplectes curculionis) in all parts of COLORADO during 1961; and a SCOLIID (Scolia dubia) was frequently reported as common in several VIRGINIA counties, particularly around infestations of green June beetle (Cotinis nitida).

In INDIANA, field collections of loopers (Anagrapha falcifera, Rachiplusia ou, Trichoplusia ni and Autographa precationis) from commercially grown mint in Jasper County, yielded parasitic species in varying numbers. Both primary and secondary (hyperparasitic) parasites were reared from these hosts. Species of the family Tachinidae, as well as parasitic Hymenoptera of the families Eulophidae, Braconidae and Ichneumonidae, were represented in these samples. Other hymenopterous parasites, Praon simulans and Aphidius pisivorus (braconids) as well as Aphelinus sp. (Eulophidae), were reared from pea aphid.

HONEY BEE (Apis mellifera) pollination in WASHINGTON orchards was variable because of inclement weather during April and May; pollination periods on legume-seed crops shortened by high temperatures of summer in nonirrigated

areas. Several thousand colonies were destroyed by a carbamate insecticide used for corn earworm control on sweet corn in the lower Yakima Valley; poisoning cases were first noted about July 15, continuing into the summer in late corn areas. A survey indicated that about 60 percent of the colonies were lost by fall in the most hazardous locality; many more will probably not survive the winter. Drought conditions in southern and central CALIFORNIA reduced the natural honey bee pasture and resulted in greater crowding of apiaries into irrigated areas. Bee losses attributed to pesticide injury have been great. Many colonies are too weak or have insufficient stores to overwinter. A high incidence of American fowlbrood disease has been found in apiaries neglected or abandoned because of beekeepers losing interest or taking other work.

Emergence of ALKALI BEE (Nomia melanderi) began in mid-June in Humboldt County, NEVADA, in areas where alfalfa seed is produced. The native populations were equal to those of 1960 which were below those of previous years in Nevada. Alkali bee began emerging in the southwestern part of IDAHO in early June. Population levels were generally higher during the past year due to continued efforts on the part of many growers to protect and maintain present nesting sites and to establish new "bee beds". A number of WASHINGTON growers completed movement of soil cores to artificial bee sites during early June. Adult alkali bee emergence started in the Yakima Valley of Washington by mid-June. High temperatures in June hastened emergence and shortened the pollination period which caused a general reduction in seed yields from alfalfa.

A LEAFCUTTING ANT (Megachile rotundata) became far more common to abundant in southern IDAHO during the past year, especially in certain areas of the Boise Valley in the southwestern part of the State. Measures have been taken by many growers in these areas to provide additional nesting sites for this species. M. rotundata was collected in WASHINGTON at Moses Lake, Grant County; Pasco, Franklin County; and Prosser, Benton County.

In NEVADA, several species of Anthophora (Apidae), Megachile (Megachilidae) and Xylocopa (Apidae) were observed as pollinators of alfalfa in Clark County, and those of Anthophora, Bombus (Apidae), Megachile, Melissodes (Apidae) and Osmia (Megachilidae) as pollinators of alfalfa and clover in Humboldt County.

Empty pupal cases of a PARASITIC TACHINA FLY (Lydella grisescens) were found quite frequently in east and southeast NEBRASKA during both the summer and fall surveys for European corn borer. In KANSAS, parasitism of European corn borer by this tachina fly increased to 13 percent compared with 4 percent in 1960. In ARIZONA, another TACHINA FLY (Voria ruralis) parasitized cabbage looper which was infesting cole crops and lettuce. In Larimer County, COLORADO, grasshoppers were subject to considerable attack by ROBBER FLIES and FLESH FLIES, and these flies were also active in other areas of that State. FLOWER FLIES appeared on several crops in ARIZONA and larvae of these flies were present in moderate numbers in pea aphid-infested fields of clover and alfalfa in northern ILLINOIS in early June. Populations of flower flies were about normal in IDAHO.

LACEWINGS appeared on several crops in ARIZONA and were present in usual numbers in OKLAHOMA. These predators, in combination with other predatory species, were largely responsible for the 26.2 percent reduction in the population of first-brood European corn borer in KANSAS. Chrysopa spp. were abundant in alfalfa and potatoes in southeast WYOMING and the Big Horn Basin and approximately 50 per 10 sweeps were present on red clover in eastern NEBRASKA during June. Activity of these species was also common in fields containing corn leaf aphid in the latter State, and in cotton fields in ARKANSAS. GOLDEN-EYE LACEWING (Chrysopa oculata) larvae were rather scarce during 1961 in ILLINOIS, but another LACEWING (C. coloradensis) was very effective in controlling aphid populations in alfalfa in COLORADO.

DAMSEL BUGS (Nabis spp.) were commonly encountered on several crops in ARIZONA during the season and, except for lady beetles, were one of the most frequently encountered predators in alfalfa and cotton in NEVADA. Damsel bug populations were near normal during 1961 in IDAHO and varying numbers, ranging from 2 to 60 per 10 sweeps, occurred throughout the 1961 season in legumes in NEBRASKA. These predators were very effective in alfalfa, keeping aphid populations at low levels in COLORADO and large populations occurred in most areas of WYOMING during 1961, particularly in alfalfa in areas where large populations of Lygus spp. were present. These predators, in combination with other predatory species, were largely responsible for a 46.2 percent reduction in the first-brood population of European corn borer in KANSAS. Damsel bugs were relatively scarce throughout the season in ILLINOIS; the first adults of the season were observed in clover fields on April 21. Damsel bugs were common throughout VIRGINIA on alfalfa and clover during 1961 and probably were instrumental in keeping aphid populations in check. They were also abundant in cotton in ARKANSAS.

FLOWER BUGS were predaceous on nymphs of pear psylla in WASHINGTON, but not sufficiently so to prevent early season damage to pears. Orius spp. were abundant throughout WYOMING, the largest populations occurring in corn and grain fields in the southeast, and were frequently encountered in ARIZONA during the year. Light to heavy populations of a FLOWER BUG (Orius insidiosus) were present in alfalfa, vetch, corn and grain sorghum in OKLAHOMA, particularly in the southeast area, with peak activity from June through August. This same flower bug was present in normal numbers in KANSAS during the 1961 season, and along with other species of predators, helped reduce the European corn borer population. Reduction of the first-brood European corn borer population in Kansas by predators was 46.2 percent, but the second-brood reduction was only 18.8 percent. O. insidiosus was abundant in fields of clover, alfalfa and corn in ILLINOIS where aphids were present, and was abundant in cotton in ARKANSAS.

MINUTE PIRATE BUGS and ASSASSIN BUGS, except for lady beetles, were two of the most frequently encountered predators in alfalfa and cotton in NEVADA. BIG-EYED BUGS (Geocoris spp.) populations were near normal in IDAHO and commonly encountered in ARIZONA, NEVADA and ARKANSAS.

A WHITEFLY (Aleyrodes spiraeoides) was recorded as a pest of Klamathweed in San Juan County, WASHINGTON. This species was previously reported as a major pest of late potatoes and a minor pest of red clover raised for seed in the eastern areas of the State.

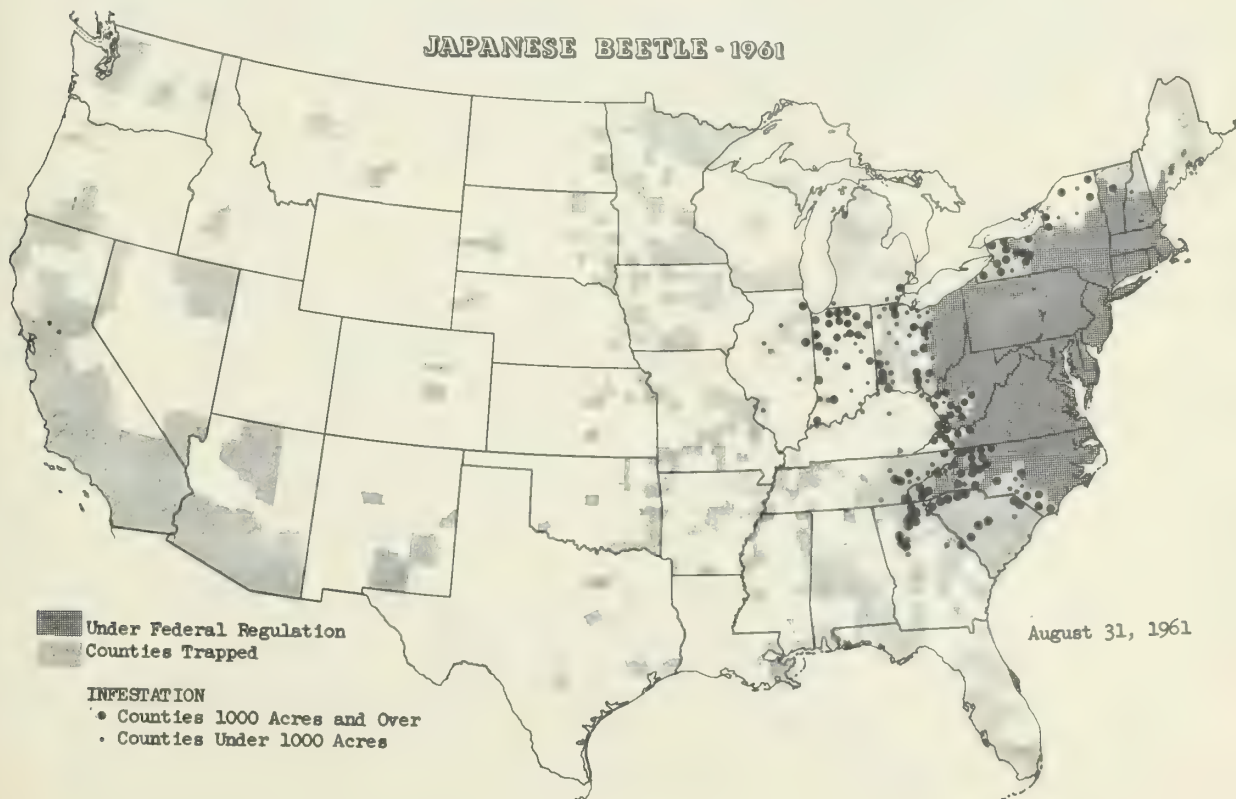
EUROPEAN MANTIS (Mantis religiosa) caused interest in many areas of RHODE ISLAND in mid-August. A predatory species of a PHYTOSEIID MITE was heavy in Yuma County, ARIZONA, in Bermuda grass-seed fields. Also in Arizona, an ERYTHRAEID MITE parasitized moths collected in central and southwestern areas.

MISCELLANEOUS INSECTS

Highlights: JAPANESE BEETLE became established in Sacramento, California, during 1961; eradication measures were immediately undertaken. Infestations continued to spread in Indiana and the beetle was numerous in many sections of eastern Ohio during 1961. IMPORTED FIRE ANT was found in 11 new counties and parishes during 1961.

Marked progress has been made toward the elimination of outlying JAPANESE BEETLE (*Popillia japonica*) infestations. During the fall of 1961, an additional 17,300 acres were treated near Sheldon, ILLINOIS. This program has involved a total of 130,821 acres. MICHIGAN and IOWA have treated all of their known infestations and TENNESSEE is undertaking a vigorous program to treat all of its known infestations. The beetle was probably the most important insect taken during 1961 in CALIFORNIA. Discovery of an infestation in the State Capitol grounds in Sacramento, Sacramento County, began an intensive eradication program. Foliage treatment began immediately after the initial discovery. Ground treatment followed and was completed late in the summer. Some 400 adults and 30 larvae were recovered during the June to November period. Over 3,000 traps were in operation in Sacramento and environs during the season as well as a large crew for visual inspection.

Only 9 Japanese beetles were captured in 8 of 3,664 traps in operation in the St. Louis area of MISSOURI during the summer of 1961. Beetles were taken in untreated territory in and near downtown St. Louis. There were no beetles captured in 3 previously infested areas which had been soil treated in the past few years. Areas where beetles were captured in the summer of 1961 were soil treated with granular insecticide the following December by State and Federal personnel. Involved was an area of 1,100 acres which contained 400 acres of soil and turf. A total of 456 acres was also treated at the St. Louis-Lambert Municipal Airport as a precautionary measure to prevent establishment of the beetle. That work was done cooperatively by the State of Missouri, Federal Government and the St. Louis Airport Commission. One beetle was trapped at the airport at Columbia, Missouri. The area involved will be treated in the spring of 1962. Negative results were obtained from 717 traps in use in 27 other Missouri counties during the summer of 1961.



Results of the Japanese beetle trapping program in Clark, Elko, Pershing and Washoe Counties, NEVADA, were negative; and no specimens were collected in traps placed at major commercial and military airports in NEW MEXICO during 1961. In NEBRASKA, two adults were trapped at Offutt Air Force Base, Douglas County, late in the summer. This is the first time the insect has been collected in the State. However, an infestation is not believed to be established. A total of 172 traps were established in SOUTH DAKOTA by July 17. No beetles were collected during the summer and fall.

Japanese beetle continued to spread in INDIANA and is now known from most of the larger urban areas of the State. A new infestation at Vincennes was found during 1961. In general, population levels were low, although populations in Evansville were high. In the Newton County area, primarily rural, numbers were low except for a 2-square-mile area. Here, some 200,000 larvae per acre were found in soy-beanland in the fall of 1960 and a peak adult population of 25,000 per acre was present in August 1961. Adults were very numerous in many sections of eastern OHIO in 1961. Larval counts in the fall indicate that the 1962 adult population will be lower than it was in 1961. The first adults were observed in RHODE ISLAND about July 3. They became very numerous in some areas of Providence and Cranston, Providence County, by July 14. No adults were noted in the Kingston and Narragansett areas of Washington County, which is unusual. Infestations in these areas became moderate later.

Summer flights of ASIATIC GARDEN BEETLE (*Autoserica castanea*) to lights were heavy and caused concern in RHODE ISLAND, especially in the southern portion of the State. A MAY BEETLE (*Phyllophaga affabilis*) was taken in a light trap in Mills County, IOWA, during the year; a new State record.

SAP BEETLES (*Glischrochilus* spp.), often called picnic beetles, were troublesome throughout INDIANA during 1961, causing annoyance to picnickers and to people at other outdoor activities. Control practices now appear necessary and feasible. *G. quadrisignatus* was abundant and annoying in northern OHIO during late July. EARWIGS were not so abundant as in 1960 in CONNECTICUT. A BARK BEETLE (*Pseudopityophthorus pubipennis*) became a nuisance in residences in several areas within CALIFORNIA. They were probably associated with stored firewood.

Status of European Chafer

ORIGINAL FIND

CONNECTICUT

New Haven Co. - July 1 & 5, 1951

NEW JERSEY

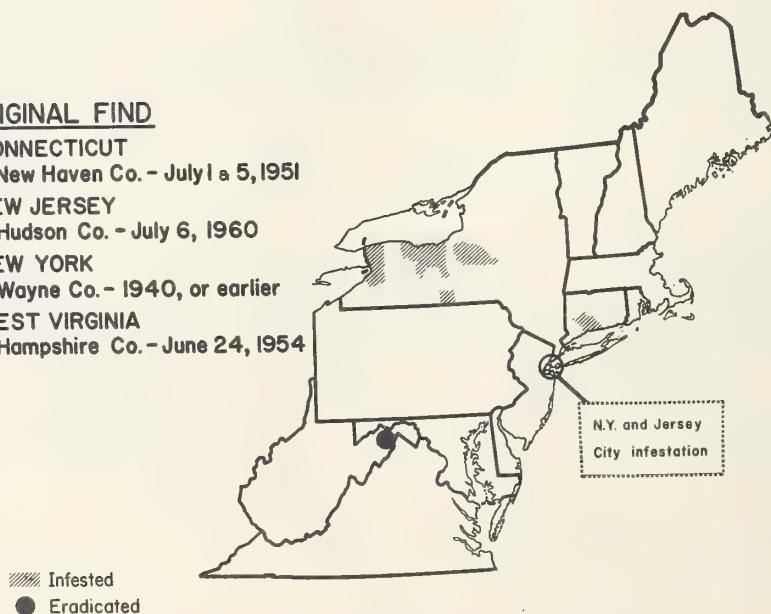
Hudson Co. - July 6, 1960

NEW YORK

Wayne Co. - 1940, or earlier

WEST VIRGINIA

Hampshire Co. - June 24, 1954

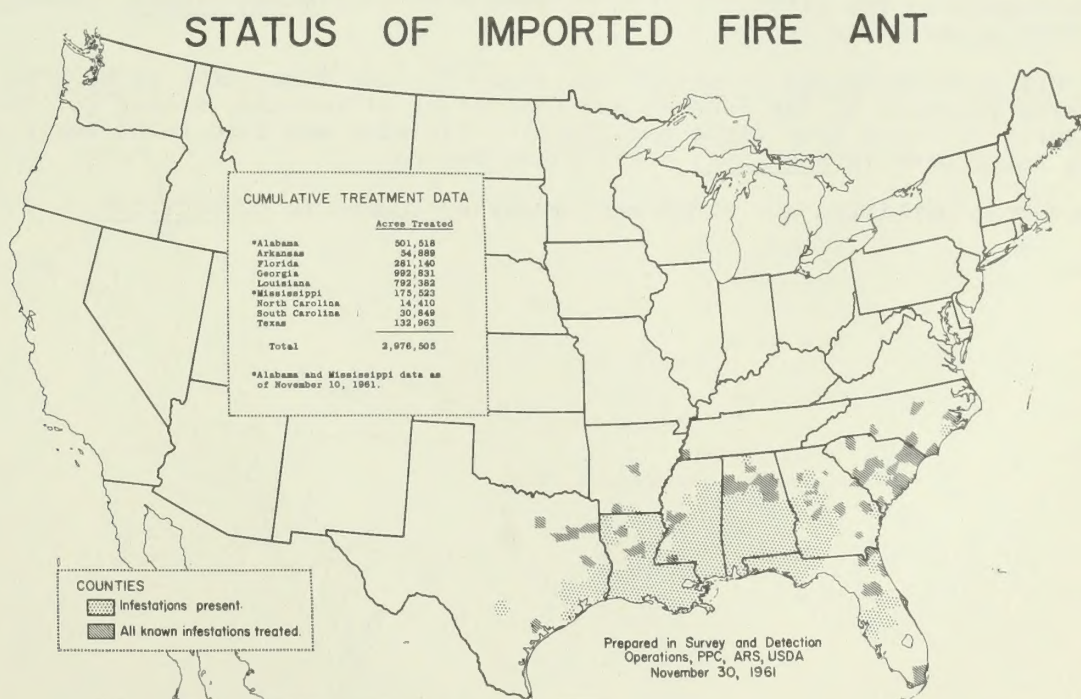


Some progress has been made to date toward eliminating outlying EUROPEAN CHAFER (*Amphimallon majalis*) infestations and reducing the size of others. The infestation in WEST VIRGINIA has been treated in its entirety. Only a single specimen has been caught or observed in this area in the last 5 years. NEW JERSEY is treating all infestations found with eradication as the objective. Additional treatments were applied by the State of CONNECTICUT in the Meriden area in 1961. There apparently has been no spread from that area. In NEW YORK, however, control work has not kept pace with the spread. There has been yearly spread to new areas in this latter State.

CICADA KILLER (*Sphecius speciosus*) was fairly abundant locally in RHODE ISLAND and caused concern due to ferocious appearance and conspicuous burrows in lawns. Adults were an annoying problem to many homeowners in MARYLAND, flying about lawns in Montgomery, Howard and Baltimore Counties. The species was also received for determination from several VIRGINIA localities during 1961. Infestations of GIANT HORNET (*Vespa crabro germana*) spread to several north and north-eastern GEORGIA counties during 1961.

Infestations of ALLEGHENY MOUND ANT (*Formica exsectoides*) were heavy in Wayne County, OHIO, and reported killing young trees in the vicinity of the mounds. SOUTHERN FIRE ANT (*Solenopsis xyloni*) was reported for the first time in NORTH CAROLINA during 1961. The infestation was in Anson County.

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) continued to spread somewhat during the 1961 season, but there has been continuing progress in the program. Approximately 3 million cumulative acres have been treated in 250 counties of 9 states. All known infestations in 65 peripheral counties have been treated. Eleven new counties and parishes were reported infested in 7 states during 1961. They were as follows: ALABAMA - Marion County; FLORIDA - Pinellas County; GEORGIA - Pulaski County; LOUISIANA - Caldwell, Catahoula, La Salle and Lincoln Parishes; MISSISSIPPI - Warren County; SOUTH CAROLINA - Jasper County; TEXAS - Brazoria and Montgomery Counties. Surveys for the pest in OKLAHOMA during 1961 were negative.



Several programs were continued for FRUIT FLIES during 1961 in CALIFORNIA. Trapping and fruit cutting by county and State cooperation in locations where 3 ORIENTAL FRUIT FLY (Dacus dorsalis) adults were taken in 1960 proved negative for this species. MEXICAN FRUIT FLY (Anastrepha ludens) is under project status as it does not occur in California. A year-around trapping program is maintained. Federal participation assists in this part of the year. Regular bait sprays are applied as foliage sprays during the part of the year when there is hazard involved. No flies were taken in California in 1961; however, several flies were taken in Mexico adjacent to San Diego County. Also in California, specimens of a rare species, Tephritis labecula, were received from a Frick trap in Prunus emarginata in Alpine County. Specimens of another fruit fly, Paroxyna pallidipennis, were also taken for the first time in the State in the same area.

A MIDGE (Chironomus crassicaudatus) was extremely heavy near Georgetown, Kent County, MARYLAND, on August 15. Literally gallons of midges were caught in light traps within a few minutes.

Extensive host records of SCALE INSECTS have been kept for the past several years in FLORIDA; during 1961, 159 new hosts were recorded in the State. In CALIFORNIA, control of the BEE T LEAFHOPPER (Circulifer tenellus) continued during the year. The fall spray program applied spray treatment to approximately 175,000 acres of range and brush lands in the San Joaquin Valley foothills. Russian thistle elimination during the summer has reduced the area previously infested and treated. Also in California, CITRUS WHITEFLY (Dialeurodes citri) spray treatment was applied to 22 city blocks in the City of Sacramento, Sacramento County. Post-spray check was negative for this species. A WATER BOATMAN (Corixa sp.) was particularly abundant in the Dos Palos area of Merced County, California, becoming a nuisance at night to the extent that several business establishments were forced to turn off lights and close up early.

CALIFORNIA TORTOISE-SHELL (Nymphalis californica) infested 6 sections of land containing ceanothus on the Priest Lake Ranger District of IDAHO during May. Larvae of an EPIPASCHIID (Epipaschia zelleri) were observed skeletonizing poisonivy in the sandhills area of Ransom County, NORTH DAKOTA, during August 1960; a new State record.

A BEE MITE (Acarapis dorsalis) was found for the first time in WYOMING during early February at the Federal Bee Laboratory at Laramie, Albany County, on the thorax of honey bees (Apis mellifera). The mite was also found early in 1961 on honey bees in NEBRASKA; a new State record.

SOWBUGS, MILLIPEDS and SLUGS were reported common in CONNECTICUT.

UNITED STATES DEPARTMENT OF AGRICULTURE

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